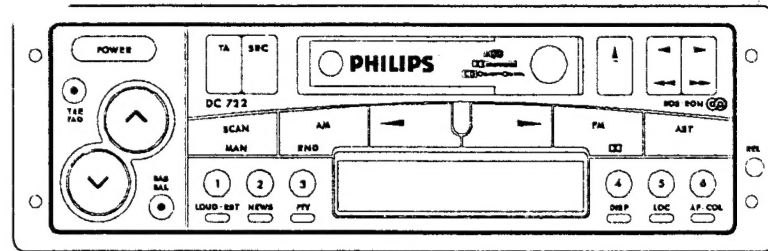


Service
Service
Service



For repair information of the Cassette deck see Service
Manual N° 4822 725 23509 of Auto Cassette Deck SCA-4.4
+4703 2/33/

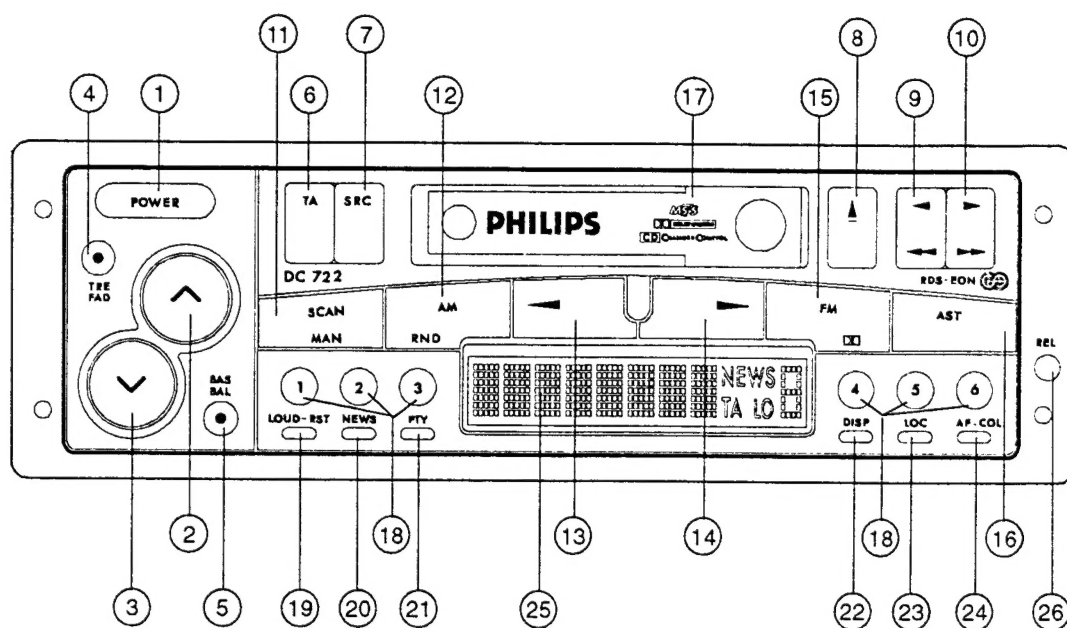
Service Manual

12 V

Contents	page
Controls	2
Connections	3
Technical data - Chips handling	3a
Loudspeakers connections - Warnings	4
IC91 module features	4a
Semiconductors - IC pinings	5 - 5a
Detachable front schematic diagram	6 - 6a
Detachable front PWB layout	7 - 7a
DC voltages - Checks and adjustments	8 - 8a
Technician's remarks	9
Tuner part schematic diagram	9a
Microcontroller part schematic diagram	10 - 10a
Main PWB layout	11 - 11a - 14 - 14a
Power supply part schematic diagram	12 - 12a
Signal processing part schematic diagram	13 - 13a
Tape part schematic diagram	15 - 15a
Power part DC722 schematic diagram	16 - 16a
Power part DC712 schematic diagram	17 - 17a
Detachable front exploded view	18 - 18a
Set exploded view	19 - 19a
Electrical partslist	20 - 20a - 21 - 21a - 22

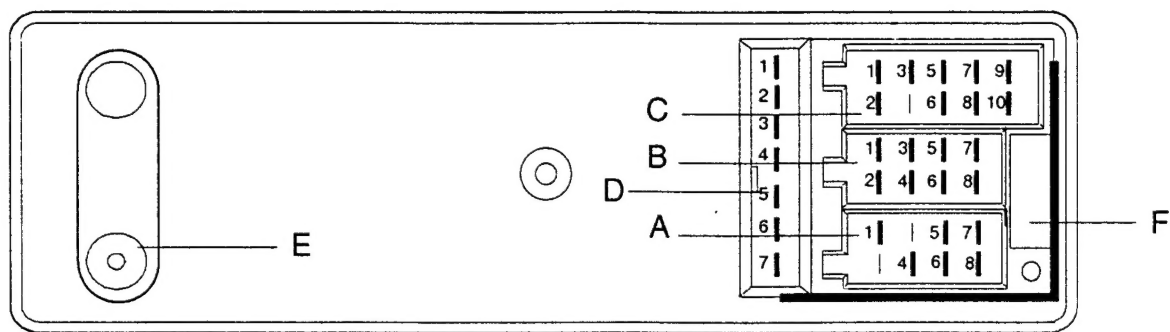


Front



1	ON / OFF	16	AUTOSTORE
2	UP	17	CASSETTE OPENING
3	DOWN	18	PRESET SELECTION
4	TREBLE / FADER		DISC SELECTION
5	BASS / BALANCE	19	LOUDNESS SELECTION
6	TRAFFIC ANNOUNCEMENT		AUDIO RESET
7	SOURCE SELECTOR	20	NEWS SELECTION
8	EJECT	21	PROGRAM TYPE SELECTION
9	FRW 9 + 10 REVERSE	22	DISPLAY SELECTION (CLOCK)
10	FFW	23	LOCAL MODE SELECTION
11	SCAN PRESETS / TRACKS	24	ALTERNATIVES FREQUENCIES
	MANUAL SEARCH SELECTION		COLOR SELECTION (DC722 only)
12	AM SELECTION / RANDOM TRACKS	25	DISPLAY
13	SEARCH DOWN / TRACK DOWN	26	RELEASE KNOB FOR DETACHABLE UNIT
14	SEARCH UP / TRACK UP		
15	FM SELECTION / DOLBY		

REAR



A1 TELEPHONE MUTE	A : POWER SUPPLY
A2 (NO PIN)	
A3 (NO PIN)	
A4 PERM OR IGNITION KEY +	
A5 ANTENNA SUPPLY	
A6 CAR ILLUMINATION LEVEL	
A7 IGNITION KEY OR PERM +	
A8 POWER GROUND	
B1 REAR RIGHT +	B :LOUDSPEAKER SUPPLY
B2 REAR RIGHT - FRONT RIGHT -	
B3 FRONT RIGHT + FRONT RIGHT +	4 OR 2 LOUDSPEAKERS (DC712 only)
B4 FRONT RIGHT -	
B5 FRONT LEFT + FRONT LEFT +	
B6 FRONT LEFT -	
B7 REAR LEFT +	
B8 REAR LEFT - FRONT LEFT -	
C1 POWER GROUND	C : CD CHANGER CONNECTIONS
C2 BUS +	
C3 BUS -	
C4 (NO PIN)	
C5 C.D.C. SUPPLY	(Linked to A4 and A7)
C6 POWER GROUND	
C7 = A5	
C8 LINE IN RIGHT	
C9 LINE IN LEFT	
C10 LINE IN GROUND	
D1 = A5	D : LINE OUT
D2 BOOSTER DETECTION	
D3 AUDIO GROUND	
D4 FRONT RIGHT OUT	
D5 REAR RIGHT OUT	
D6 FRONT LEFT OUT	
D7 REAR LEFT-OUT	
D8 CONNECTOR SHIELD	
E AERIAL PLUG	E : AERIAL PLUG
	According to DIN 41585 with adaptor
	According to ISO/DIS 10599 without adaptor
F FUSE	F : FUSE 10 A(DC722), 5A(DC712)

TECHNICAL DATA

GENERAL

Power supply	: 14.4V DC
Dimensions	: 180x150x51 mm
Front	: Detachable
Security code	: No

RADIO

LW	: 144-288 KHz
MW	: 531-1611 KHz
FM	: 87.5-108 MHz
SW	: 5.95-6.25 MHz
IF-AM (1/2)	: 10.7 MHz/450KHz
IF-FM (1/2)	: 72.2 MHz/10.7 MHz
Sensitivity 26dB S/N	: 38 μ V (LW)
	: 30 μ V (MW)
	: 25 μ V (SW)
	: 3.5 μ V (FM)
Limitation α -3dB	: 5.5 \pm 2.5 μ V

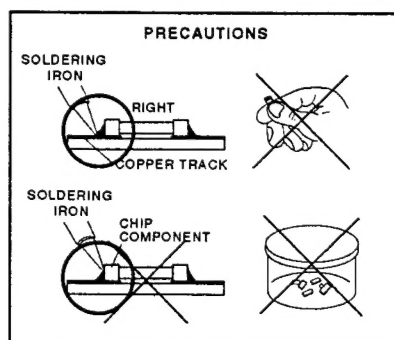
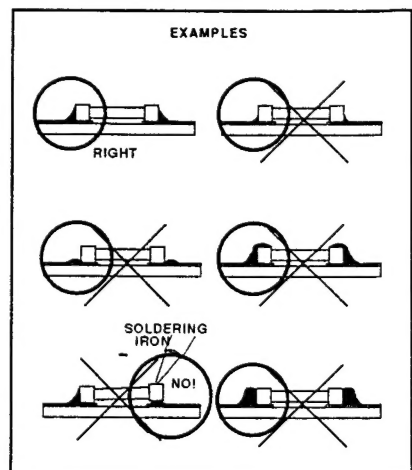
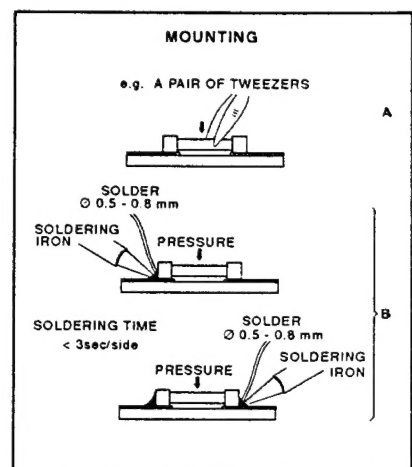
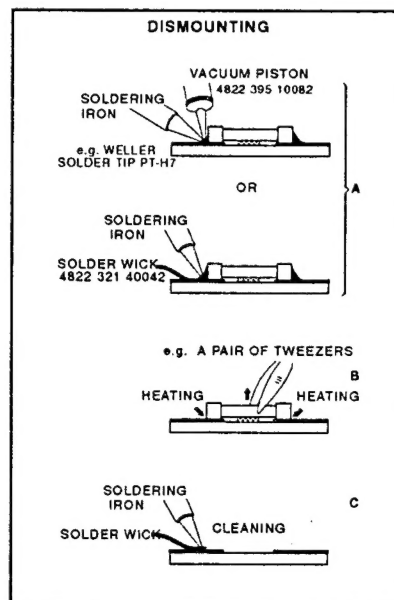
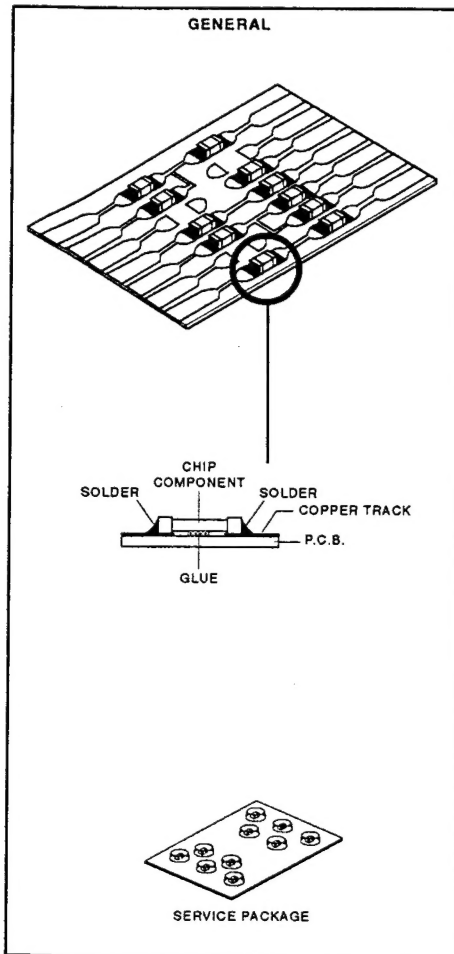
CASSETTE

Cassette mechanism	: SCA-4.4
Number of tracks	: 2x2
Tape speed	: 4.76 cm/sec
Wow and flutter	: \leq 0.35%
Crosstalk	: \geq 35dB

AMPLIFIER

Output power	: 4x14.5W / 4 Ω (D = 10%)
Treble control	: +10 / -10 at 10kHz
Bass control	: +15 / -15 at 60Hz
Balance control	: -28dB
Fader	: -28dB
Mute	: -70dB
Loudness	: +12dB at 60Hz
	: +1dB at 1KHz
	: +3dB at 10KHz

HANDLING CHIP COMPONENTS

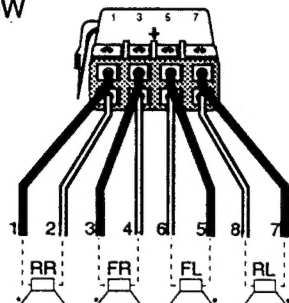


22DC712/00 22DC722/00

Loudspeakers connection

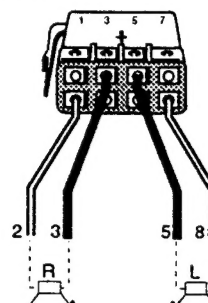
4 Loudspeakers

DC712: 4X12W
DC722: 4X30W



2 Loudspeakers

DC712: 2X30W



WARNING!

The software of the set is splitted in two parts: one in the front microcontroller and the other one in the main microcontroller. Make sure when changing a front or a microcontroller that both main and front are software compatible.

Software release numbers

You can read the 'checksum' of the microcontrollers (main and front) applying the following method:

a) Switch on the "demo mode":

While keeping the preset 1 and preset 5 keys pressed, switch on the set. You are now in the demo mode.

b) Press simultaneously the preset 1 and preset 6 keys. Two 4 digits numbers appear on the display:

first 4 digits: checksum of main micro

second 4 digits : checksum of the front micro.

Quit the demo mode following the same method (keys 1 and 5 and switch on).

A table stating the different checksums related to the software releases and retro-compatibility will be issued regularly in service newsletters.

ESD



WARNING

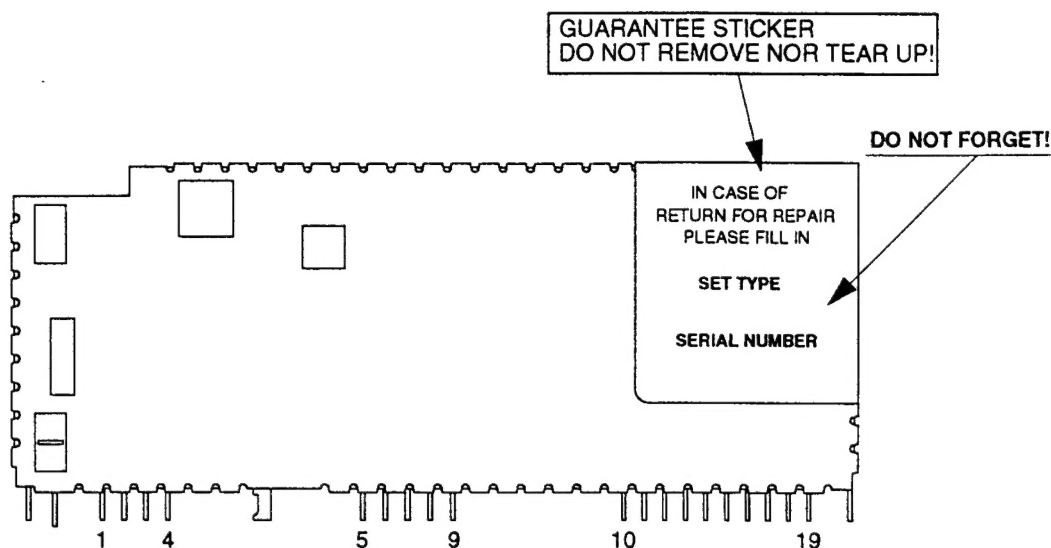
All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

IC91 MODULE

Do not open and do not try to repair yourself!

Send defective modules to **Philips Consumer Service** in Eindhoven, according to the Central Repair procedure.



Connections

1	AM/FM Aerial input	10	Multiplex / RDS output signal
2	Ground	11	Unweighted level output
3	Antenna select 1	12	I ² C SDA
4	Antenna select 2	13	I ² C SCL
5	Output lock detector	14	PACS on/off
6	Vcc 8.5V	15	Output Left
7	Ground	16	Output Right
8	Vcc 5.0V	17	Ground
9	V reference	18	PACS level out
		19	PACS MPX/RDS output signal

Quick reference data:

1) AM part

- Longwave/Mediumwave 144-1710 KHz
- Shortwave 5900-6250 KHz
- AM double super concept
- AM IF1 10.7MHz
- AM IF2 450KHz
- First VCO frequency above input signal frequency
- Second X-tal oscillator frequency below IF1
- Usable sensitivity $\alpha 26$ dB MW = 14 μ V typ.

1) FM part

- FM 87.5 - 108MHz
- FM double super concept
- FM IF1 72.2MHz
- FM IF2 10.7MHz
- First VCO frequency above input signal frequency
- Second X-tal oscillator frequency below IF1
- Usable sensitivity $\alpha 26$ dB = 2.5 μ V typ.
- THD 1mV $\delta f = 75$ KHz = 0.4% typ
- Signal to noise ratio = 65dB typ
- Locktime synthesizer <2mSec

INTEGRATED CIRCUITS

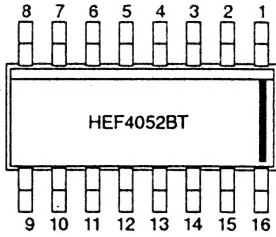
SAA6579T Radio Data System demodulator

SYMBOL	PIN	DESCRIPTION
QUAL	1	quality indication output
RDDA	2	RDS data output
V _{ref}	3	reference voltage output (0.5 V _{DDA})
MPX	4	multiplex input signal
V _{DDA}	5	+5V supply voltage for analog part
V _{SSA}	6	ground for analog part (0V)
CIN	7	subcarrier input to comparator
SCOUT	8	subcarrier output for reconstruction filter
TCTR	9	test control
TEN	10	test enable
V _{SSD}	11	ground for digital part (0V)
V _{DDD}	12	+5V supply voltage for digital part
OSCI	13	oscillator input
OSCO	14	oscillator output
T57	15	57kHz clock signal output
RDCL	16	RDS clock output



HEF4052BT Dual 4 channel analogue multi/demultiplexer

SYMBOL	PIN	DESCRIPTION
Y _{0B}	1	independant input/output 0 _B
Y _{2B}	2	independant input/output 2 _B
Z _B	3	common input/output B
Y _{3B}	4	independant input/output 3 _B
Y _{1B}	5	independant input/output 1 _B
\bar{E}	6	enable input (active LOW)
V _{EE}	7	ground
V _{SS}	8	ground
A ₁	9	address input 1
A ₀	10	address input 0
Y _{3A}	11	independant input/output 3 _A
Y _{0A}	12	independant input/output 0 _A
Z _A	13	common input/output A
Y _{1A}	14	independant input/output 1 _A
Y _{2A}	15	independant input/output 2 _A
V _{DD}	16	supply

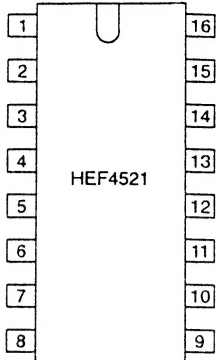


FUNCTION TABLE

inputs			channel ON
\bar{E}	A ₁	A ₀	
L	L	L	Y _{0A} -Z _A ; Y _{0B} -Z _B
L	L	H	Y _{1A} -Z _A ; Y _{1B} -Z _B
L	H	L	Y _{2A} -Z _A ; Y _{2B} -Z _B
L	H	H	Y _{3A} -Z _A ; Y _{3B} -Z _B
H	X	X	none

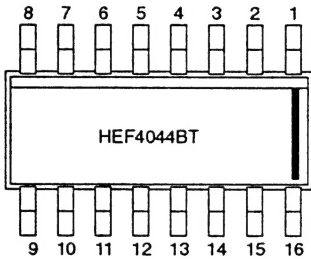
HEF4521BP 24-stage frequency divider

SYMBOL	PIN	DESCRIPTION
O ₂₄	1	output 2 ²⁴
MR	2	asynchronous master reset
V _{SS}	3	
O ₂	4	
V _{DD}	5	
I ₂	6	
O ₁	7	
V _{SS}	8	ground
I ₁	9	
O ₁₈	10	output 2 ¹⁸
O ₁₉	11	output 2 ¹⁹
O ₂₀	12	output 2 ²⁰
O ₂₁	13	output 2 ²¹
O ₂₂	14	output 2 ²²
O ₂₃	15	set input 3 (active LOW)
V _{DD}	16	power supply



HEF4044BT Quad R/S latch with 3-state outputs

SYMBOL	PIN	DESCRIPTION
O ₃	1	3-state buffered latch output 3
n.c	2	
\bar{S}_0	3	set input 0 (active LOW)
\bar{R}_0	4	reset input 0 (active LOW)
E ₀	5	common output enable input
\bar{R}_1	6	reset input 1 (active LOW)
\bar{S}_1	7	set input 1 (active LOW)
V _{SS}	8	ground
O ₁	9	3-state buffered latch output 1
O ₂	10	3-state buffered latch output 2
\bar{S}_2	11	set input 2 (active LOW)
\bar{R}_2	12	reset input 2 (active LOW)
O ₀	13	3-state buffered latch output 0
\bar{R}_3	14	reset input 3 (active LOW)
\bar{S}_3	15	set input 3 (active LOW)
V _{DD}	16	supply



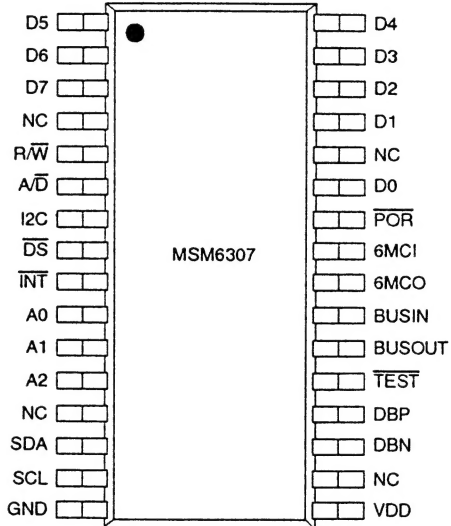
FUNCTION TABLE

inputs			output
E ₀	\bar{S}_n	\bar{R}_n	O _n
L	X	X	Z
H	L	H	H
H	X	L	L
H	H	H	latched

Z = high impedance OFF-state

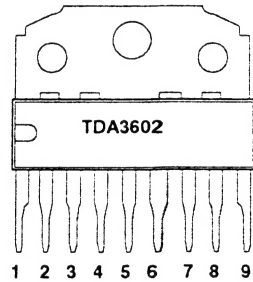
MSM6307GS D²B IC

SYMBOL	I/O	DESCRIPTION
$\overline{\text{POR}}$	I	Power on - reset
R / $\overline{\text{W}}$	I	Read / Write selector
$\overline{\text{DS}}$	I	Data strobe to access data bus
A / $\overline{\text{D}}$	I	Selects address or data on D0 - d7
SDA	I/O	I ² C data signal input / output
SCL	I/O	I ² C clock signal input / output
I ² C	I	Selects I ² C or parallel interface
$\overline{\text{INT}}$	O	Interrupt output
BUSIN	I	D2B input (TTL level)
BUSOUT	O	D2B output (TTL level)
DBN & DBP	I/Os	Differential D2B lines of the internal driver/receiver, to be terminated with 60Ω
$\overline{\text{TEST}}$	I	Selects the test mode for factory purposes
6MCI	I	Clock input 6MHz resonator or X-TAL
6MCO	O	Clock output 6MHz resonator or X-TAL
D0 - D7	I/Os	8-bit bi-directional address or data bus
A0 - A2	I	Programmables I ² C slave addresses



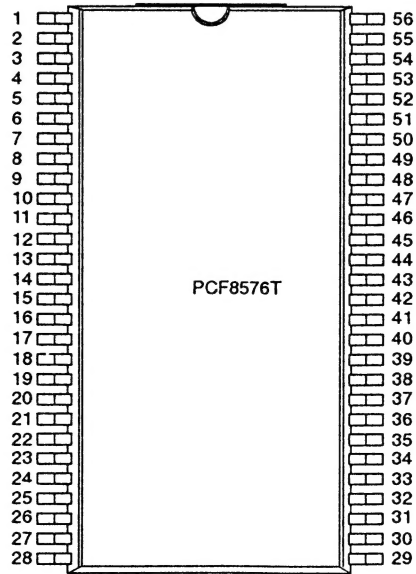
TDA3602 Multiple output voltage regulator

SYMBOL	PIN	DESCRIPTION
V _P	1	positive supply voltage
REG1	2	regulator 1 output
RESET	3	reset output
SCI	4	state control input
HOLD	5	hold output
GND	6	ground
REG3	7	regulator 3 output
V _{bu}	8	back-up
REG2	9	regulator 2 output

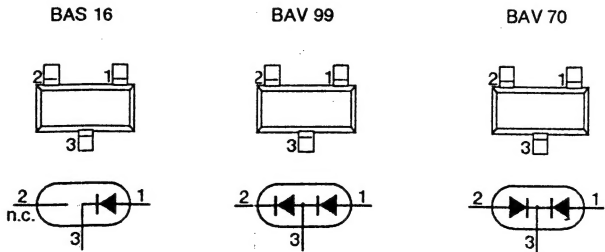


PCF8576T Universal LCD driver for low multiplex rates

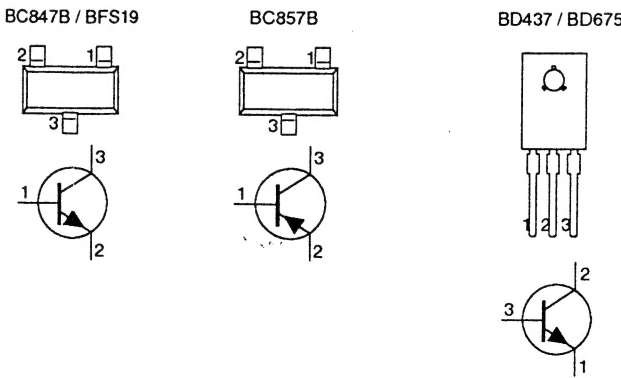
SYMBOL	PIN	DESCRIPTION
SDA	1	I ² C bus data input/output
SCL	2	I ² C bus clock input/output
SYNC	3	cascade synchronization input/output
CLK	4	external clock input/output
V _{DD}	5	positive supply voltage
OSC	6	oscillator input
A0	7	I ² C bus subaddress input
A1	8	I ² C bus subaddress input
A2	9	I ² C bus subaddress input
SA0	10	I ² C bus slave address bit 0 input
V _{SS}	11	logic ground
V _{LCD}	12	LCD supply voltage
BP0	13	LCD backplane outputs
BP2	14	LCD backplane outputs
BP1	15	LCD backplane outputs
BP3	16	LCD backplane outputs
S0 to S39	17 to 56	LCD segment outputs



DIODES

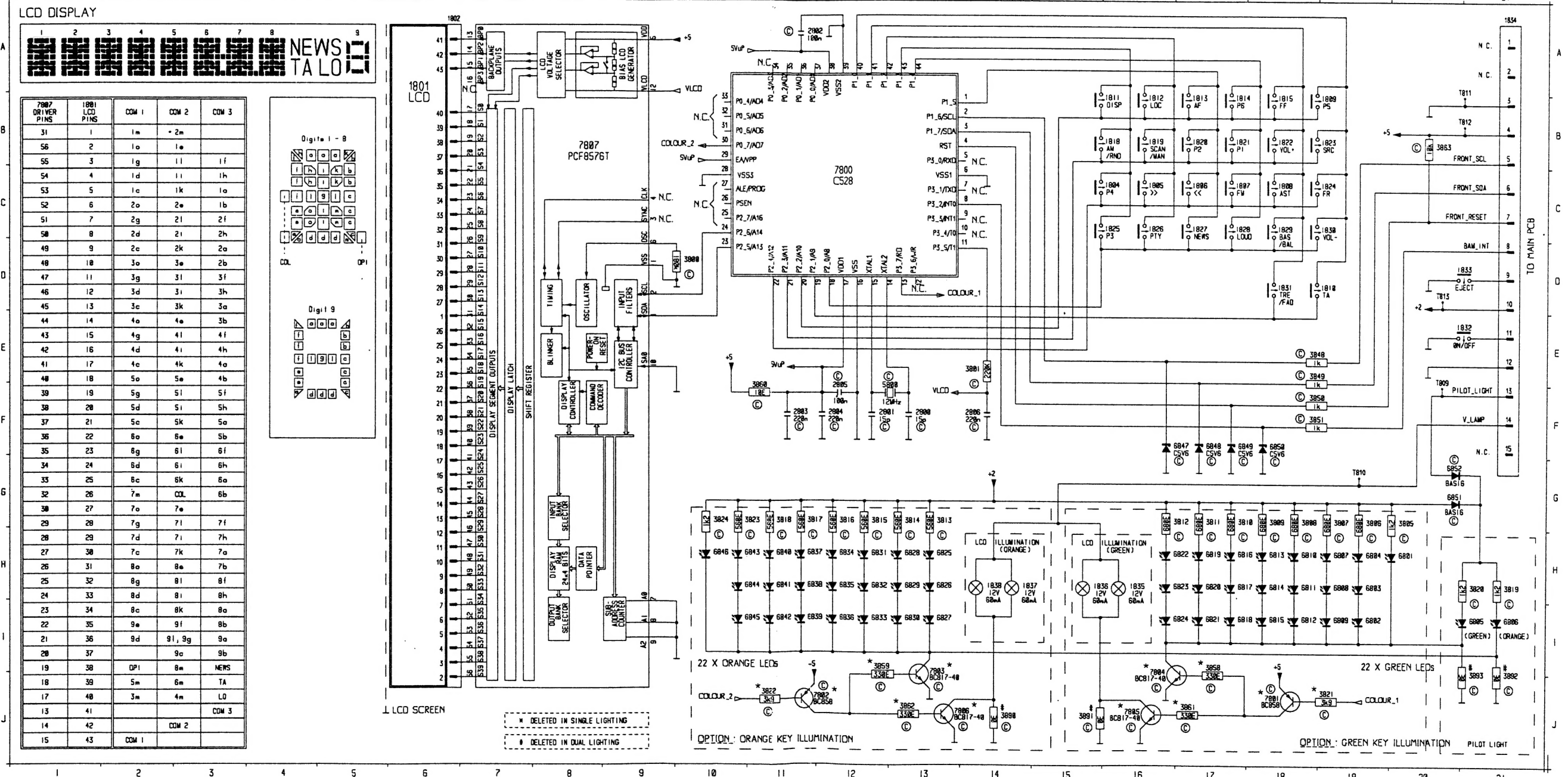


TRANSISTORS



22DC712-22DC722
DETACHABLE FRONT

1802	A 6	1809	B 19	1815	B 18	1823	B 19	1829	C 18	1835	H 16	2802	A 11	3801	E 14	3810	G 17	3816	G 12	3822	J 11	3851	F 18	3863	B 20	6801	H 20	6807	H 19	6813	H 18	6819	H 17	6825	H 13	6831	H 12	6837	H 11	6843	H 11	6849	F 17	7802	J 11	7809	E 20
1804	C 16	1810	D 19	1818	B 16	1824	C 19	1830	C 19	1836	H 15	2803	F 11	3805	G 20	3811	G 17	3817	G 11	3823	G 11	3858	I 17	3890	J 14	6802	I 19	6808	H 19	6814	H 18	6820	H 17	6826	H 13	6832	H 12	6838	H 11	6844	H 11	6850	F 18	7803	J 13	7810	G 19
1805	C 16	1811	B 16	1819	B 16	1825	C 16	1831	D 18	1837	H 14	2804	F 12	3806	G 19	3812	G 17	3818	G 11	3824	G 10	3859	I 12	3891	J 15	6803	H 19	6809	I 19	6815	H 18	6821	H 17	6827	H 13	6833	H 12	6839	H 11	6845	I 11	6851	G 20	7804	J 16	7811	A 21
1806	C 17	1812	B 16	1820	B 17	1826	C 16	1832	E 21	1838	H 14	2805	F 12	3807	G 19	3813	G 13	3819	H 21	3848	E 18	3860	F 11	3892	J 21	6804	H 19	6810	H 18	6816	H 17	6822	H 17	6828	H 13	6834	H 12	6840	H 11	6846	H 10	6852	G 20	7805	J 16	7812	B 21
1807	C 17	1813	B 17	1821	B 17	1827	C 17	1833	D 21	2800	F 13	2806	F 14	3808	G 18	3814	G 13	3820	H 21	3849	E 18	3861	J 17	3893	J 21	6805	I 21	6811	H 18	6817	H 17	6823	H 17	6829	H 13	6835	H 12	6841	H 11	6847	F 17	7800	C 12	7806	J 13	7813	D 20
1808	C 18	1814	B 17	1822	B 18	1828	C 17	1834	A 21	2801	F 12	3800	D 10	3809	G 18	3815	G 12	3821	J 19	3850	F 18	3862	J 13	5800	F 13	6806	I 21	6812	H 18	6818	H 17	6824	I 17	6830	I 13	6836	I 12	6842	I 11	6848	F 17	7801	J 18	7807	B 8		



DC VOLTAGES

IC91 TUNER MODULE

1 = 0.5 V	11 = 3.2 V
2 = GND	12 = 5.0 V
3 = N.C.	13 = 5.0 V
4 = N.C.	14 = 5.0 V
5 = N.C.	15 = N.C.
6 = 5.0 V	16 = 3.8 V
7 = 8.5 V	17 = 3.8 V
8 = GND	18 = 0.0 V
9 = 5.0 V	19 = N.C.
10 = 5.1 V	20 = N.C.

7257 LA2000

1 = 1.8 V	6 = 5.0 V
2 = 7.3 V	7 = N.C.
3 = 2.1 V	8 = N.C.
4 = N.C.	9 = 8.5 V
5 = GND	

7354 TEA6320

1 = 5.0 V	17 = 3.7 V
2 = GND	18 = 3.8 V
3 = 4.0 V	19 = 7.6 V
4 = 3.9 V	20 = 6.0 V
5 = 3.9 V	21 = 3.9 V
6 = 3.9 V	22 = N.C.
7 = 3.8 V	23 = 3.7 V
8 = 3.5 V	24 = 3.8 V
9 = 3.8 V	25 = 3.5 V
10 = 3.7 V	26 = 3.9 V
11 = N.C.	27 = 3.9 V
12 = 7.6 V	28 = 3.9 V
13 = 6.0 V	29 = 3.9 V
14 = 3.8 V	30 = 3.9 V
15 = 3.8 V	31 = 7.6 V
16 = 3.7 V	32 = 4.9 V

7355 SAA6579T

1 = N.C.	9 = GND
2 = 3.1 V	10 = GND
3 = 2.5 V	11 = GND
4 = 2.5 V	12 = 4.9 V
5 = 4.9 V	13 = 4.332 MHz
6 = GND	14 = 4.332 MHz
7 = 2.3 V	15 = N.C.
8 = 2.5 V	16 = 3.5 V


7550/7551 TDA7374

1 = 7.4 V	9 = GND
2 = 7.4 V	10 = 0.2 V
3 = 14.4 V	11 = 1.0 V
4 = 1.0 V	12 = 1.0 V
5 = 1.0 V	13 = 14.4 V
6 = 1.0 V	14 = 7.4 V
7 = 3.5 V	15 = 7.4 V
8 = Earth	

7601 ST24C16

1 = 5.0 V	5 = 5.0 V SDA
2 = 5.0 V	6 = 5.0 V SCL
3 = 5.0 V	7 = GND
4 = GND	8 = 5.0 V

7602 HEF4521

1 = N.C.	9 = GND
2 = GND	10 = N.C.
3 = 0.0 V	11 = N.C.
4 = 4.194 MHz	12 = N.C.
5 = 4.194 MHz	13 = N.C.
6 = 4.194 MHz	14 = 1 Hz 
7 = N.C.	15 = N.C.
8 = GND	16 = 5.0 V

7603 MSM6307GS

1 = 5.0 V	17 = 5.0 V
2 = 5.0 V	18 = N.C.
3 = 5.0 V	19 = 2.3 V
4 = N.C.	20 = 2.3 V
5 = 5.0 V	21 = 5.0 V
6 = 5.0 V	22 = N.C.
7 = 5.0 V	23 = 5.0 V
8 = 5.0 V	24 = 5.75 MHz
9 = 5.0 V	25 = 5.75 MHz
10 = 5.0 V	26 = 4.8 V
11 = 5.0 V	27 = 5.0 V
12 = 5.0 V	28 = N.C.
13 = N.C.	29 = 5.0 V
14 = 4.9 V SDA	30 = 5.0 V
15 = 4.9 V SCL	31 = 5.0 V
16 = GND	32 = 5.0 V

7800 TDA3602

1 = 13.4 V	6 = GND
2 = 8.5 V	7 = 5.0 V
3 = N.C.	8 = 13.2 V
4 = 0.6 V	9 = 5.0 V
5 = 5.0 V	

7862 HEF 4044BT

1 = 0.0 V	9 = 5.0 V
2 = N.C.	10 = 0.0 V
3 = 3.5 V	11 = 4.8 V
4 = 0.0 V	12 = 5.0 V
5 = 5.0 V	13 = 5.0 V
6 = 4.0 V	14 = 5.0 V
7 = 5.0 V	15 = 4.0 V
8 = GND	16 = 5.0 V

Check and Alignment

No alignment is needed for radio part. IC91 tuner is pre-aligned.

Dolby alignment:

cassette	adjust	
MTT 150 F = 400 Hz 200 nWb	3260 and 3261	AC voltage at pin 1 & 24 of 7251 = 387.5 mV +/- 50mV

Checks:

Reference oscillator frequencies

device	MSM 6307	83CE558	HEF4521	SAA6579T
pin	24 & 25	51 & 52	4 & 6	13 & 14
frequency	5.75 MHz 0.75%	11.5 MHz 0.5%	4.194304 MHz 20 ppm	4.332 MHz 60 ppm

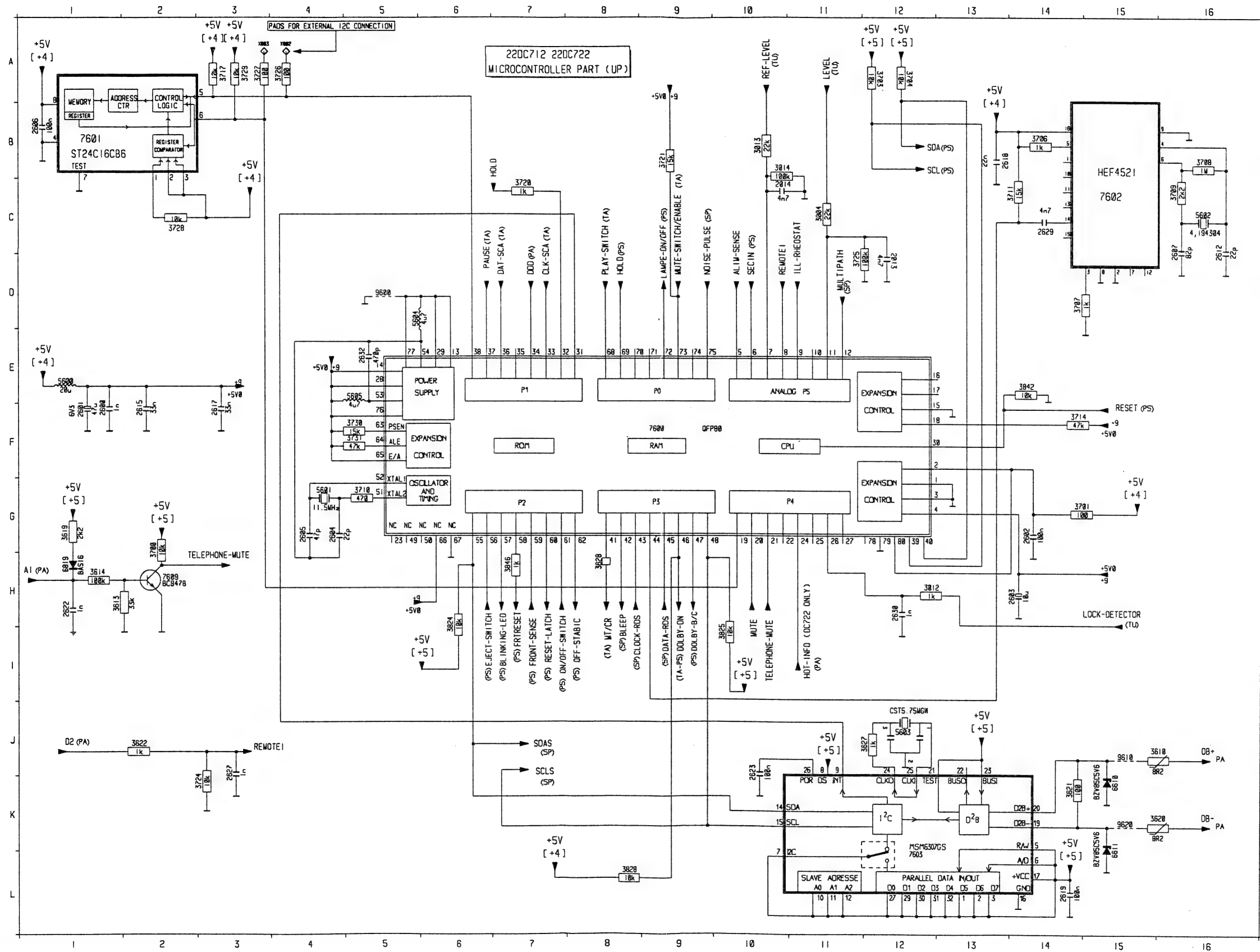
FM mute:

98 MHz 1mV	output at load resistor R & L = 775 mV = REF
no signal	output should be < -24 dB (REF - 24 dB)

Demodulated FM levels

Input	Output of IC91 (pin 16 & 17)
98 MHz	265 mV 30 mV

A1	H1	SOAS	H6	CLK-SCA	D7	ON/OFF-SWITCH	H7	CLOCK-RDS	H8	DOLBY-ON	H9	REF-LEVEL	A10	HOT-INFO	I11	DB+	J16
D2	J1	EJECT-SWITCH	H6	BLINKING-LED	H7	PLAY-SWITCH	D8	LAMP-ON/OFF	D9	DOLBY-B/C	H9	REMOTE1	D10	SDA	B12	DB-	K16
TELEPHONE-MUTE	H3-H10	HOLD	C7-D8	FRONT-SENSE	H7	OFF-STABIC	H8	MUTE-SWITCH/ENABLE	D9	SCLS	H10	MUTE	H10	SCL	B12		
REMOTE1	J3	DAT-SCA	D7	FRONT-SENSE	H7	MT/CR	H8	NOISE-PULSE	D9	ALIM-SENSE	D10	TELEPHONE-MUTE	H10	RESET	F15		
PAUSE	D6	DDD	D7	RESET-LATCH	H7	BLEEP	H8	DATA-RDS	H9	SECIN	D10	LEVEL	A11	LOCK-DETECTOR	H15		

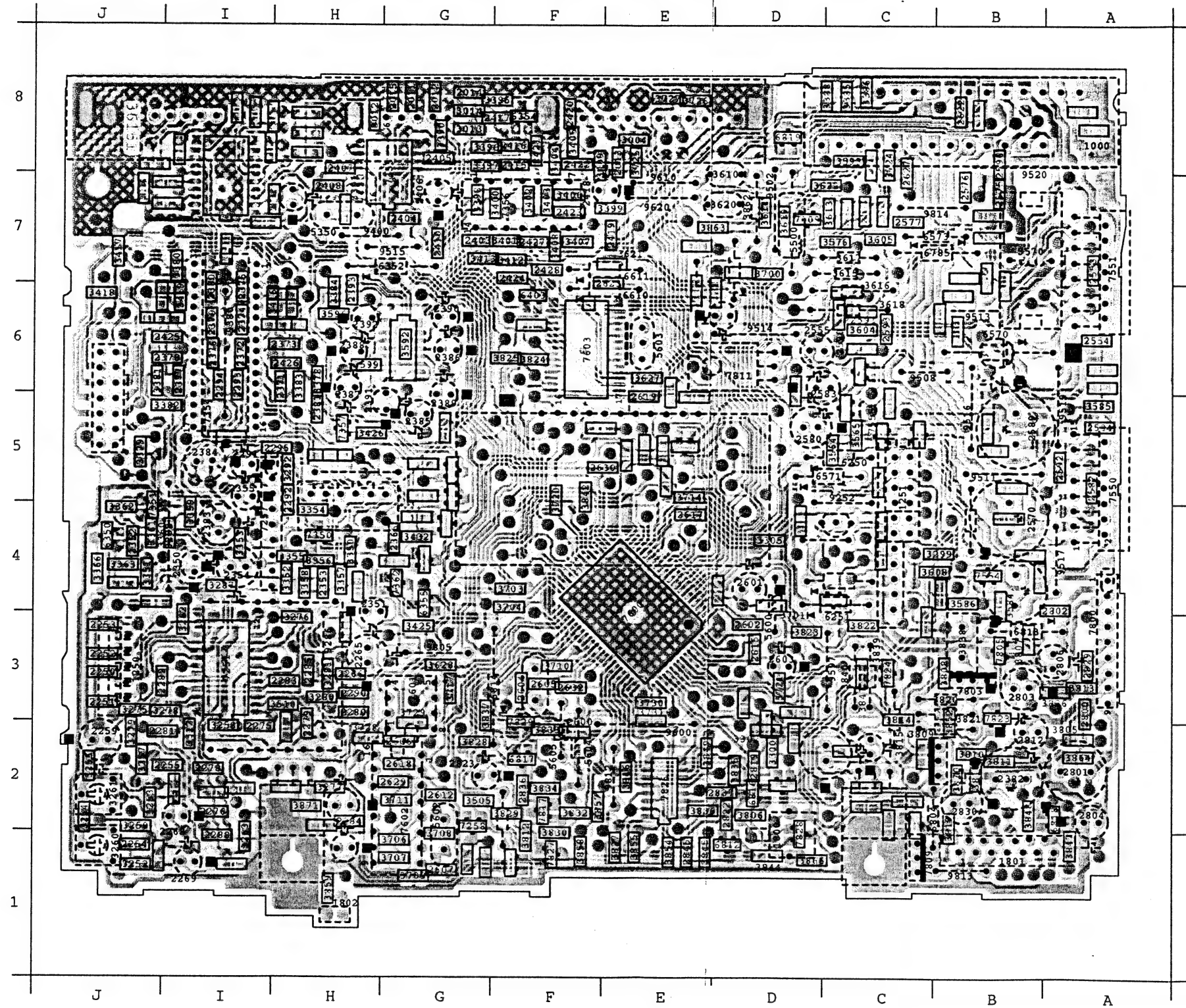


2013	D12
2014	C11
2600	F 1
2601	F 1
2602	G14
2603	H14
2604	G 5
2605	G 4
2606	B 1
2607	C16
2612	C16
2615	F 2
2617	F 3
2618	B14
2619	L14
2622	H 1
2623	J10
2627	J 3
2629	C14
2630	H12
2632	E 5
3004	C11
3012	H13
3013	B10
3014	B11
3610	J16
3613	H 2
3614	H 1
3619	G 1
3620	K16
3621	K15
3622	J 2
3627	J12
3628	H 8
3700	G 2
3701	G15
3703	A12
3704	A12
3706	B14
3707	D15
3708	B16
3709	C16
3710	G 5
3711	C14
3714	F15
3717	A 3
3720	C 7
3721	B 9
3724	K 3
3725	D12
3726	A 4
3727	A 3
3728	C 2
3729	A 3
3730	F 5
3731	F 5
3824	H 6
3825	I10
3828	J 9
3842	E14
3846	H 7
5600	E 1
5601	G 4
5602	C16
5603	J12
5604	D 6
5605	E 5
6610	K15
6611	K15
6619	H 1
7600	F 9
7601	B 1
7602	C15
7603	L12
7609	H 2
9600	D 5
9610	J15
9620	K15
X002	A 4
X003	A 4

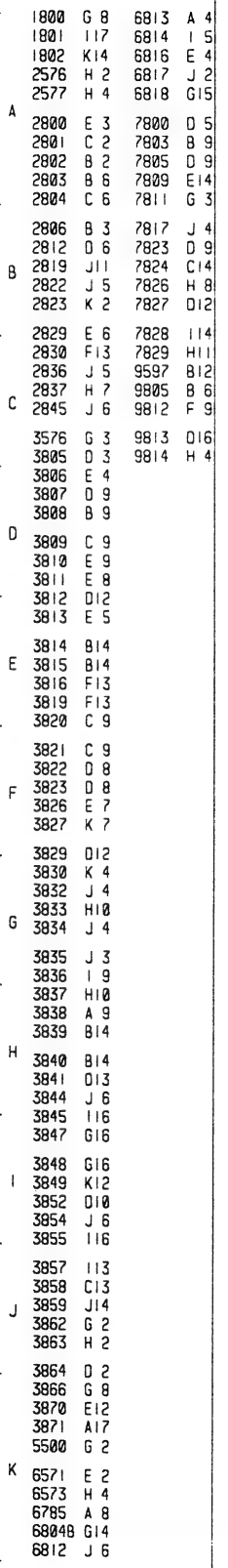
2259 J 2	2383 I 4	2392 H 6	2804 A 2	5602 G 1	3821 B 3	6251 C 4	6814 F 3	9513 B 6	9610 E 7	1800 D 1	5570 B 7	7602 G 2
2265 H 3	2384 I 5	2406 G 7	2806 A 3	5603 E 6	3839 C 3	6352 G 7	9252 C 5	9514 D 6	9620 E 7	1801 B 1	5601 F 3	7800 A 3
2268 I 2	2385 G 5	2418 E 7	2812 B 2	3615 C 7	3840 C 3	6571 C 5	9286 H 3	9515 G 7	9805 G 3	1802 H 1	6570 B 6	7803 B 3
2269 I 1	2386 G 6	2555 D 6	2823 G 2	3616 C 6	3862 D 7	6573 B 7	9288 I 4	9516 B 5	9812 E 2	2382 B 2	7257 I 4	7809 C 1
2291 I 5	2387 H 6	2580 D 5	2830 B 2	3617 C 7	5500 D 7	6610 E 6	9380 I 6	9517 A 4	9813 B 1	2570 B 4	7354 I 6	7811 D 6
2350 I 4	2388 H 6	2583 D 6	3610 D 7	3618 C 6	5600 D 4	6611 E 7	9400 H 7	9519 A 5	9814 C 7	2589 B 5	7356 F 7	
2351 H 4	2389 G 5	2601 D 4	3620 D 7	3809 B 2	5604 F 2	6785 B 7	9502 D 7	9520 B 8	1000 A 8	2801 A 2	7550 A 5	
2354 I 4	2390 G 6	2603 D 3	3838 B 3	3815 C 3	5605 F 2	6804 B 2	9508 C 6	9597 C 3	1250 J 3	3260 J 1	7551 A 7	
2355 I 5	2391 G 5	2803 B 3	5350 H 7	3820 B 3	6250 C 5	6813 B 3	9511 B 5	9600 E 2	1251 C 4	3261 J 2	7601 G 3	

22 DC712
22 DC722

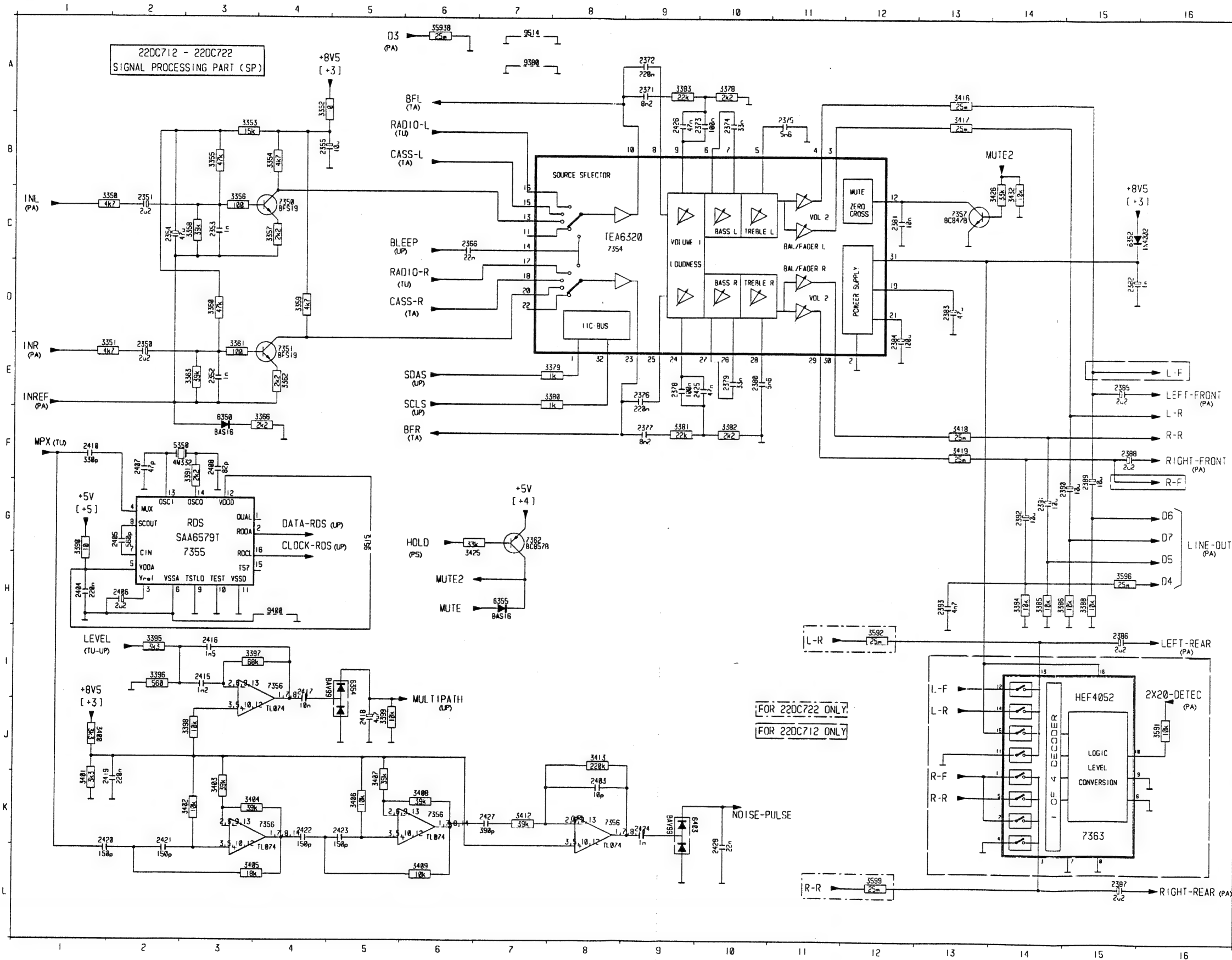
MAIN P.W.B.



2011 G 8	2605 F 3	3397 G 8	3819 B 2
2012 G 8	2606 G 2	3398 G 7	3822 C 3
2013 E 8	2607 G 1	3399 E 7	3823 D 3
2014 G 8	2612 G 2	3400 G 7	3824 F 6
2015 G 8	2615 D 3	3401 F 7	3825 F 6
2250 J 3	2617 E 4	3402 F 7	3826 A 3
2251 J 3	2618 G 2	3403 F 7	3827 E 1
2252 J 3	2619 E 5	3404 F 8	3828 G 2
2253 J 3	2622 B 8	3405 F 8	3829 F 2
2254 J 1	2623 E 6	3406 F 7	3830 F 1
2255 I 2	2627 C 8	3407 F 7	3832 F 2
2266 H 3	2629 G 2	3408 F 7	3833 F 2
2275 I 2	2630 F 5	3409 F 8	3834 F 2
2276 I 2	2632 F 3	3412 F 7	3835 D 2
2278 I 2	2800 A 3	3413 G 7	3836 E 2
2279 H 2	2802 A 4	3416 I 6	3837 G 3
2280 H 3	2819 D 2	3417 J 7	3841 C 3
2281 I 2	2822 D 2	3418 J 6	3842 F 5
2282 J 3	2829 A 3	3419 I 6	3844 D 1
2283 H 3	2836 F 2	3425 G 3	3845 E 1
2284 H 2	2837 D 2	3426 H 5	3846 E 2
2285 H 3	2845 E 1	3432 G 4	3847 A 1
2288 I 1	3004 E 8	3505 G 2	3848 B 2
2290 H 3	3012 H 8	3510 H 3	3849 E 2
2292 H 4	3013 G 8	3512 I 2	3852 B 3
2293 I 6	3014 G 8	3564 C 5	3854 E 1
2294 I 6	3252 J 1	3565 C 5	3855 E 1
2295 H 5	3253 J 2	3576 C 7	3857 F 2
2352 J 4	3254 J 2	3584 B 4	3858 F 1
2353 H 4	3255 J 2	3585 A 5	3859 H 1
2366 G 4	3257 J 2	3586 B 4	3863 E 7
2371 H 6	3258 I 2	3592 G 6	3864 A 2
2372 I 6	3259 J 2	3593 C 8	3866 D 1
2373 H 6	3262 I 3	3596 H 6	3870 B 2
2374 I 6	3263 I 1	3599 H 6	3871 H 2
2375 I 6	3275 J 3	3604 C 6	6350 J 4
2376 I 6	3276 H 3	3605 C 7	6354 F 8
2377 I 6	3277 H 2	3608 C 4	6355 G 4
2378 I 6	3278 I 3	3613 C 7	6403 F 6
2379 I 6	3279 J 2	3614 D 7	6812 D 1
2380 I 6	3280 H 3	3619 D 7	6816 D 2
2381 H 5	3281 H 3	3621 E 7	6817 F 2
2393 H 6	3287 I 4	3622 D 7	6818 A 2
2403 G 7	3292 H 5	3627 E 6	6819 D 8
2404 G 7	3299 B 4	3628 G 3	7251 I 3
2405 G 8	3300 D 2	3700 D 7	7258 G 2
2407 H 8	3302 D 2	3701 D 4	7350 H 4
2408 H 7	3305 D 4	3703 F 4	7351 J 4
2410 G 7	3350 H 4	3704 F 4	7355 G 7
2415 F 8	3351 J 4	3706 G 1	7357 H 5
2416 F 8	3352 H 4	3707 G 1	7362 G 4
2417 F 8	3353 I 4	3708 G 1	7554 B 4
2419 E 7	3354 H 4	3709 G 1	7555 C 5
2420 F 8	3355 H 4	3710 F 3	7600 E 3
2421 F 8	3356 H 4	3711 G 2	7603 F 6
2422 F 8	3357 H 4	3714 E 5	7609 D 7
2423 F 7	3358 H 4	3717 G 3	7805 B 3
2424 F 7	3359 I 4	3720 F 5	7817 F 2
2425 I 6	3360 I 4	3721 D 3	7823 B 3
2426 H 6	3361 J 4	3724 C 8	7824 C 3
2427 F 7	3362 J 4	3725 E 8	7826 E 2
2428 F 7	3363 J 4	3726 E 8	7827 F 1
2553 A 7	3366 J 4	3727 E 8	7828 D 1
2554 A 6	3378 H 6	3728 H 2	7829 F 2
2575 B 7	3379 J 5	3729 G 2	
2576 B 7	3380 I 7	3730 E 3	
2577 C 7	3381 J 6	3731 E 2	
2582 A 5	3382 I 5	3805 A 2	
2584 A 5	3383 H 6	3806 D 2	
2590 C 6	3384 H 6	3807 B 3	
2591 C 6	3385 C 8	3808 B 3	
2592 A 5	3386 C 8	3810 B 2	
2593 C 6	3388 D 8	3811 B 2	
2596 B 8	3390 G 8	3812 F 1	
2600 F 2	3391 H 7	3813 A 3	
2602 D 3	3395 F 8	3814 C 3	
2604 F 3	3396 G 8	3816 B 2	



INL... C1 DATA-RDS... G4 RADIO-L... B6 SDAS... E6 MUTE... H6-B13 R-F... J13-G16 D5... H16
 INR... E1 CLOCK-RDS... H4 CASS-L... B6 SCLS... E6 NOISE-PULSE... K10 LEFT-FRONT... E16 D4... H16
 INREF... E1 D5... A5 BLEEP... C6 BFR... F6 L-R... I11-I13-F16 RIGHT-FRONT... F16 LEFT-REAR... I16
 MPX... F1 MULTIPATH... I5 RADIO-R... D6 HOLD... G6 R-R... L11-K13-F16 D6... G16 2X20-DETEC... I16
 LEVEL... I1 BFL... A6 CASS-R... D6 MUTE2... H6 L-F... I15-E16 D7... G16 RIGHT-REAR... L16

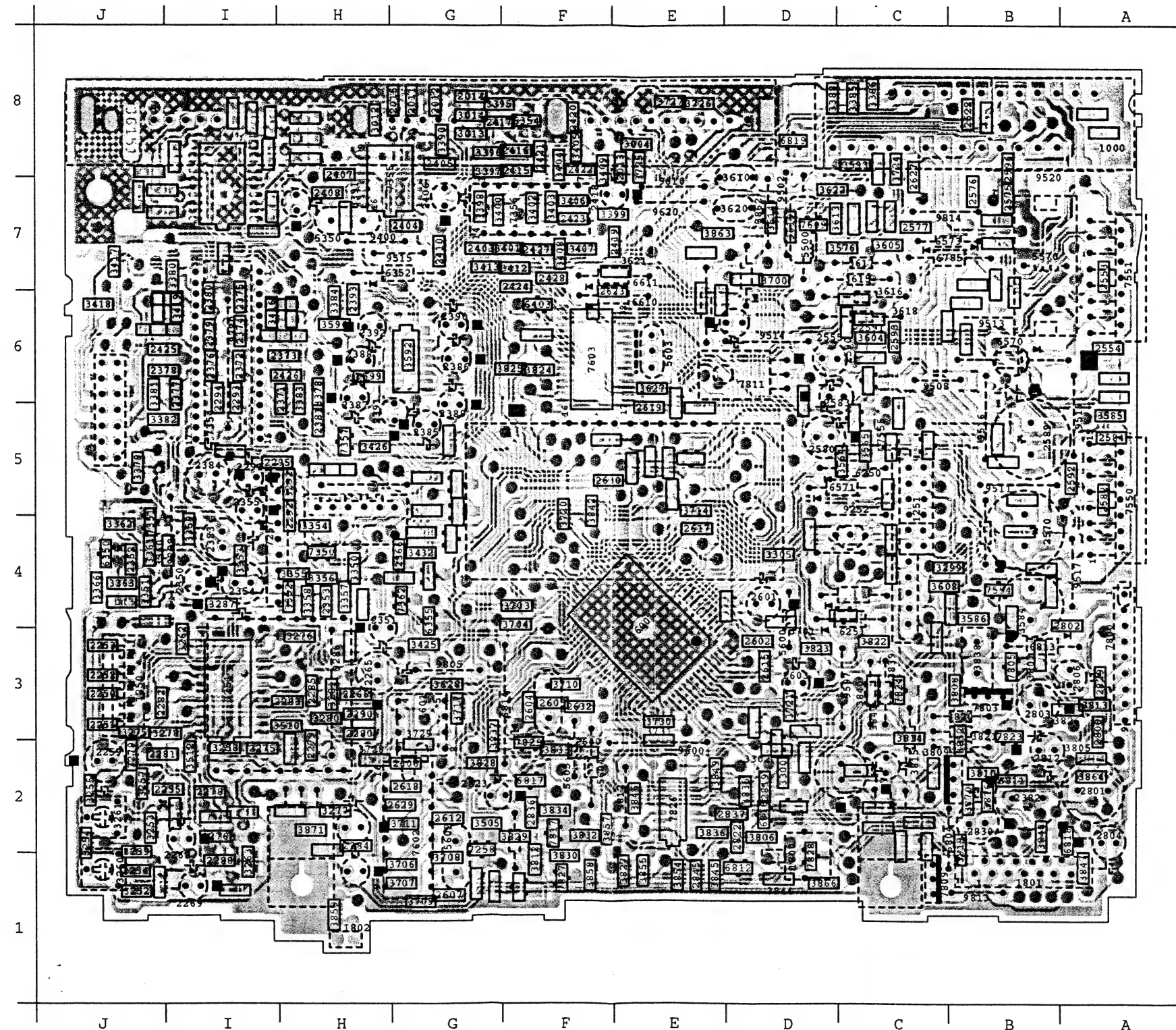


2350 E 2 3397 I 3
 2351 C 2 3398 J 3
 2352 E 3 3399 J 5
 2353 C 3 3400 J 1
 2354 C 2 3401 K 1
 A 2355 B 4 3402 K 3
 2356 C 6 3403 K 3
 2371 A 9 3404 K 3
 2372 A 9 3405 L 3
 2373 B 9 3406 K 5
 B 2374 B10 3407 K 5
 2375 B11 3408 K 6
 2376 E 9 3409 L 6
 2377 F 9 3410 K 7
 2378 E 9 3413 J 8
 C 2379 E10 3416 A13
 2380 E10 3417 B13
 2381 C12 3418 F13
 2382 D15 3419 F13
 2383 D13 3425 G 6
 D 2384 E12 3426 C13
 2385 E15 3432 C14
 2386 I15 3591 J16
 2387 L15 3592 I12
 2388 F15 3593B A 6
 2389 F15 3596 H15
 2390 G14 3599 L12
 2391 G14 5350 F 2
 2392 G14 6350 F 3
 2393 H13 6352 C15
 E 2403 K 8 6354 I 5
 2404 H 1 6355 H 7
 2405 G 2 6403 K 9
 2406 H 2 7350 C 4
 2407 F 2 7351 E 4
 2408 F 3 7354 C 8
 2410 F 1 7355 H 2
 2415 I 3 7356 I 4
 2416 I 3 7356 K 4
 2417 I 4 7356 K 6
 F 2418 J 5 7356 K 8
 2419 K 1 7357 C13
 2420 L 1 7362 G 7
 G 2421 L 2 7363 K15
 2422 K 4 9380 A 7
 2423 K 5 9400 H 4
 2424 K 9 9514 A 7
 2425 E 9 9515 G 5
 2426 B 9
 2427 K 7
 H 2428 L10
 3350 C 1
 3351 E 1
 3352 A 4
 3353 B 3
 I 3354 B 4
 3355 B 3
 3356 C 3
 3357 C 4
 3358 C 3
 3359 D 4
 3360 D 3
 3361 E 3
 3362 E 4
 3363 E 3
 3366 F 4
 3378 A10
 3379 E 7
 K 3380 E 7
 3381 F 9
 3382 F10
 3383 A 9
 3384 H14
 3385 H14
 3386 H14
 L 3388 H15
 3390 G 1
 3391 F 3
 3395 I 2
 3396 I 2

2259 J 2	2383 I 4	2392 H 6	2804 A 2	5602 G 1	3821 B 3	6251 C 4	6814 F 3	9513 B 6	9610 E 7	1800 D 1	5570 B 7	7602 G 2
2265 H 3	2384 I 5	2406 G 7	2806 A 3	5603 E 6	3839 C 3	6352 G 7	9252 C 5	9514 D 6	9620 E 7	1801 B 1	5601 F 3	7800 A 3
2268 I 2	2385 G 5	2418 E 7	2812 B 2	3615 C 7	3840 C 3	6571 C 5	9286 H 3	9515 G 7	9805 G 3	1802 H 1	6570 B 6	7803 B 3
2269 I 1	2386 G 6	2555 D 6	2823 G 2	3616 C 6	3862 D 7	6573 B 7	9288 I 4	9516 B 5	9812 E 2	2382 B 2	7257 I 4	7809 C 1
2291 I 5	2387 H 6	2580 D 5	2830 B 2	3617 C 7	5500 D 7	6610 E 6	9380 I 6	9517 A 4	9813 B 1	2570 B 4	7354 I 6	7811 D 6
2350 I 4	2388 H 6	2583 D 6	3610 D 7	3618 C 6	5600 D 4	6611 E 7	9400 H 7	9519 A 5	9814 C 7	2589 B 5	7356 F 7	
2351 H 4	2389 G 5	2601 D 4	3620 D 7	3809 B 2	5604 F 2	6785 B 7	9502 D 7	9520 B 8	1000 A 8	2801 A 2	7550 A 5	
2354 I 4	2390 G 6	2603 D 3	3838 B 3	3815 C 3	5605 F 2	6804 B 2	9508 C 6	9597 C 3	1250 J 3	3260 J 1	7551 A 7	
2355 I 5	2391 G 5	2803 B 3	5350 H 7	3820 B 3	6250 C 5	6813 B 3	9511 B 5	9600 E 2	1251 C 4	3261 J 2	7601 G 3	

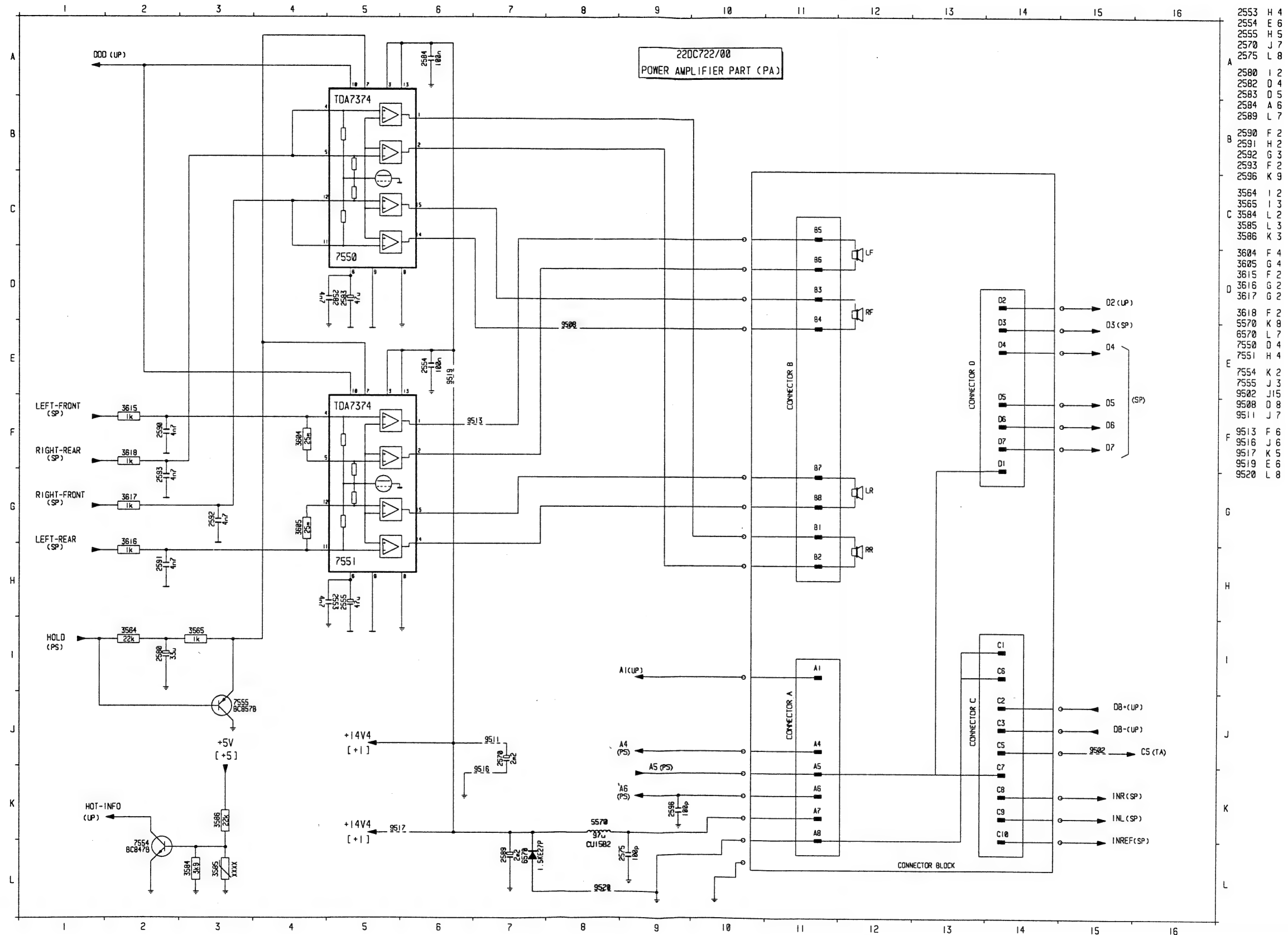
22 DC712
22 DC722

MAIN P.W.B.



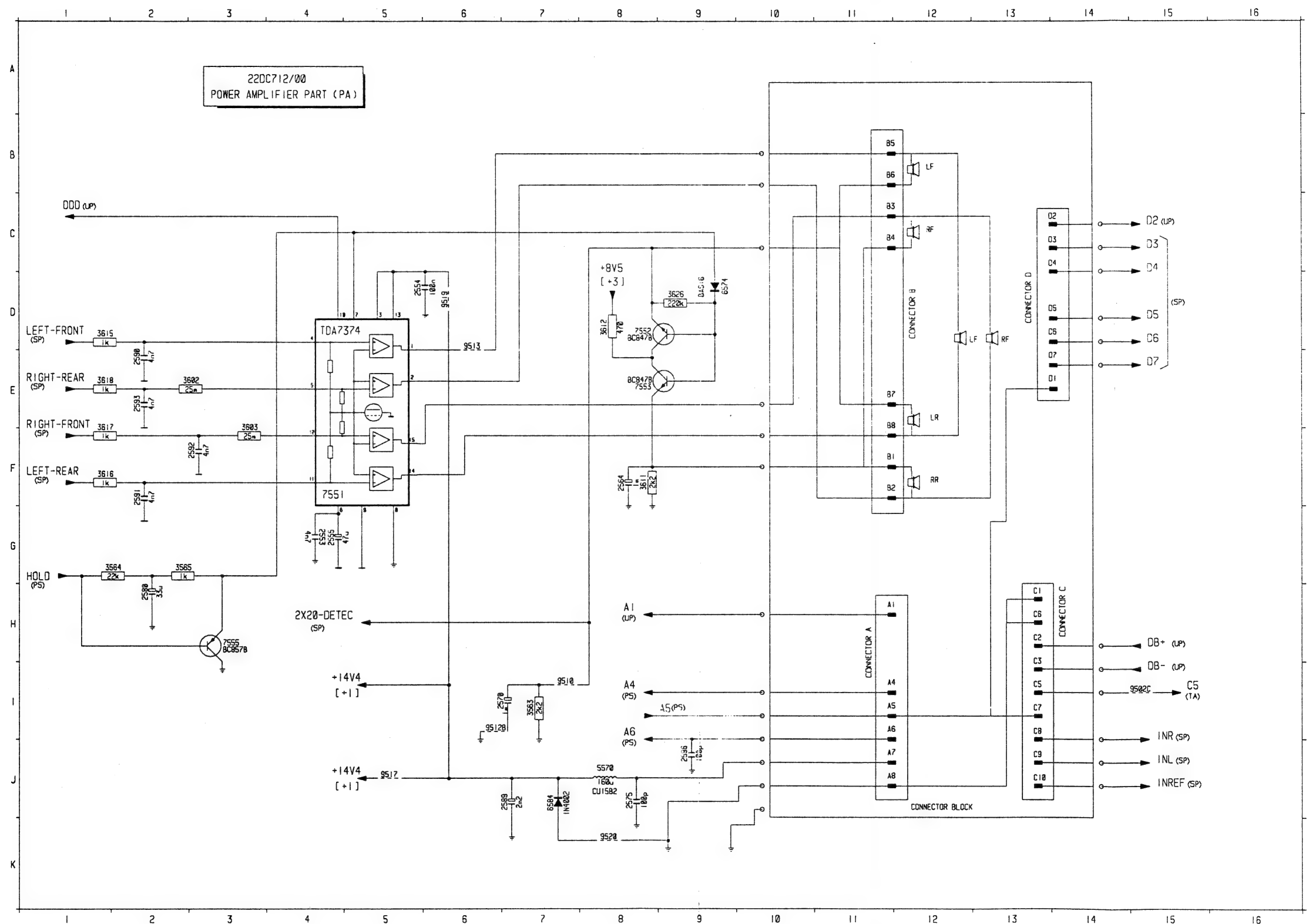
2011 G 8	2605 F 3	3397 G 8	3819 B 2
2012 G 8	2606 G 2	3398 G 7	3822 C 3
2013 E 8	2607 G 1	3399 E 7	3823 D 3
2014 G 8	2612 G 2	3400 G 7	3824 F 6
2015 G 8	2615 D 3	3401 F 7	3825 F 6
2250 J 3	2617 E 4	3402 F 7	3826 A 3
2251 J 3	2618 G 2	3403 F 7	3827 E 1
2252 J 3	2619 E 5	3404 F 8	3828 G 2
2253 J 3	2622 B 8	3405 F 8	3829 F 2
2254 J 1	2623 E 6	3406 F 7	3830 F 1
2255 I 2	2627 C 8	3407 F 7	3832 F 2
2266 H 3	2629 G 2	3408 F 7	3833 F 2
2275 I 2	2630 F 5	3409 F 8	3834 F 2
2276 I 2	2632 F 3	3412 F 7	3835 D 2
2278 I 2	2800 A 3	3413 G 7	3836 E 2
2279 H 2	2802 A 4	3416 I 6	3837 G 3
2280 H 3	2819 D 2	3417 J 7	3841 C 3
2281 I 2	2822 D 2	3418 J 6	3842 F 5
2282 J 3	2829 A 3	3419 I 6	3844 D 1
2283 H 3	2836 F 2	3425 G 3	3845 E 1
2284 H 2	2837 D 2	3426 H 5	3846 E 2
2285 H 3	2845 E 1	3432 G 4	3847 A 1
2288 I 1	3004 E 8	3505 G 2	3848 B 2
2290 H 3	3012 H 3	3510 H 3	3849 E 2
2292 H 4	3013 G 8	3512 I 2	3852 B 3
2293 I 6	3014 G 8	3564 C 5	3854 E 1
2294 I 6	3252 J 1	3565 C 5	3855 E 1
2295 H 5	3253 J 2	3576 C 7	3857 F 2
2352 J 4	3254 J 2	3584 B 4	3858 F 1
2353 H 4	3255 J 2	3585 A 5	3859 H 1
2366 G 4	3257 J 2	3586 B 4	3863 E 7
2371 H 6	3258 I 2	3592 G 6	3864 A 2
2372 I 6	3259 J 2	3593 C 8	3866 D 1
2373 H 6	3262 I 3	3596 H 6	3870 B 2
2374 I 6	3263 I 1	3599 H 6	3871 H 2
2375 I 6	3275 J 3	3604 C 6	6350 J 4
2376 I 6	3276 H 3	3605 C 7	6354 F 8
2377 I 6	3277 H 2	3608 C 4	6355 G 4
2378 I 6	3278 I 3	3613 C 7	6403 F 6
2379 I 6	3279 J 2	3614 D 7	6812 D 1
2380 I 6	3280 H 3	3619 D 7	6816 D 2
2381 H 5	3281 H 3	3621 E 7	6817 F 2
2393 H 6	3287 I 4	3622 D 7	6818 A 2
2403 G 7	3292 H 5	3627 E 6	6819 D 8
2404 G 7	3299 B 4	3628 G 3	7251 I 3
2405 G 8	3300 D 2	3700 D 7	7258 G 2
2407 H 8	3302 D 2	3701 D 4	7350 H 4
2408 H 7	3305 D 4	3703 F 4	7351 J 4
2410 G 7	3350 H 4	3704 F 4	7355 G 7
2415 F 8	3351 J 4	3706 G 1	7357 H 5
2416 F 8	3352 H 4	3707 G 1	7362 G 4
2417 F 8	3353 I 4	3708 G 1	7554 B 4
2419 E 7	3354 H 4	3709 G 1	7555 C 5
2420 F 8	3355 H 4	3710 F 3	7600 E 3
2421 F 8	3356 H 4	3711 G 2	7603 F 6
2422 F 8	3357 H 4	3714 E 5	7609 D 7
2423 F 7	3358 H 4	3717 G 3	7805 B 3
2424 F 7	3359 I 4	3720 F 5	7817 F 2
2425 I 6	3360 I 4	3721 D 3	7823 B 3
2426 H 6	3361 J 4	3724 C 8	7824 C 3
2427 F 7	3362 J 4	3725 E 8	7826 E 2
2428 F 7	3363 J 4	3726 E 8	7827 F 1
2553 A 7	3366 J 4	3727 E 8	7828 D 1
2554 A 6	3378 H 6	3728 H 2	7829 F 2
2575 B 7	3379 J 5	3729 G 2	
2576 B 7	3380 I 7	3730 E 3	
2577 C 7	3381 J 6	3731 E 2	
2582 A 5	3382 I 5	3805 A 2	
2584 A 5	3383 H 6	3806 D 2	
2590 C 6	3384 H 6	3807 B 3	
2591 C 6	3385 C 8	3808 B 3	
2592 A 5	3386 C 8	3810 B 2	
2593 C 6	3388 D 8	3811 B 2	
2596 B 8	3390 G 8	3812 F 1	
2600 F 2	3391 H 7	3813 A 3	
2602 D 3	3395 F 8	3814 C 3	
2604 F 3	3396 G 8	3816 B 2	

DDD A1	HOLD I1	A6 K9	D6 F15	INR K15
LEFT-FRONT... F1	HOT-INFO... K2	D2 D15	D7 F15	INL K15
RIGHT-REAR... F1	A1 I9	D3 E15	D8+ J15	INREF K15
RIGHT-FRONT... G1	A4 J9	D4 E15	D8- J15	
LEFT-REAR... H1	A5 J9	D5 F15	C5 J15	

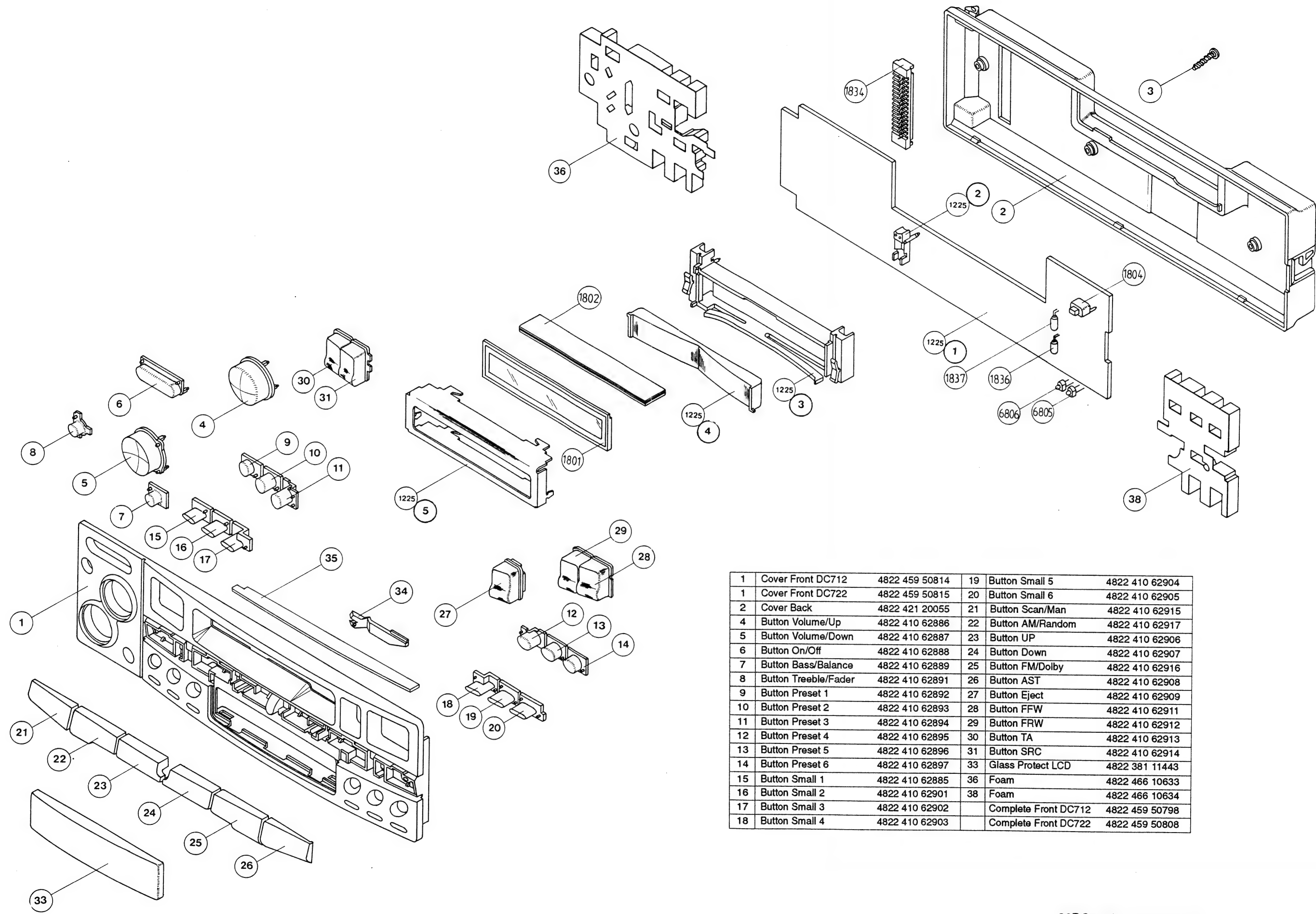


2553	H 4
2554	E 6
2555	H 5
2570	J 7
2575	L 8
A	
2580	I 2
2582	D 4
2583	D 5
2584	A 6
2589	L 7
B	
2590	F 2
2591	H 2
2592	G 3
2593	F 2
2596	K 9
C	
3564	I 2
3565	I 3
3584	L 2
3585	L 3
3586	K 3
D	
3604	F 4
3605	G 4
3615	F 2
3616	G 2
3617	G 2
3618	F 2
5570	K 8
6570	L 7
7550	D 4
7551	H 4
E	
7554	K 2
7555	J 3
9502	J15
9508	D 8
9511	J 7
F	
9513	F 6
9516	J 6
9517	K 5
9519	E 6
9520	L 8
G	
H	
I	
J	
K	
L	

DDD C1	HOLD G1	A6 I8	D6 D15	INR I15
LEFT-FRONT .. D1	2X20-DETEC .. H5	D2 C15	D7 E15	INL J15
RIGHT-REAR .. E1	A1 H8	D3 C15	DB+ H15	INREF J15
RIGHT-FRONT .. F1	A4 I8	D4 C15	DB- I15	
LEFT-REAR .. F1	A5 I8	D5 D15	CS I15	



2553	G 4
2554	D 6
2555	G 5
2564	F 8
2570	I 7
2575	J 8
2580	H 2
2589	J 7
2590	E 2
2591	F 2
2592	F 3
2593	E 2
2596	J 9
3563	I 7
3564	G 2
3565	G 2
3602	E 3
3603	F 3
3611	F 8
3612	D 8
3615	D 2
3616	F 2
3617	F 2
3618	E 2
3626	D 9
5570	J 8
6574	D 9
6584	J 7
7551	F 4
7552	D 9
7553	E 9
7555	H 3
9502	I15
9510	I 7
9512	I 7
9513	E 6
9517	J 5
9519	D 6
9520	K 8

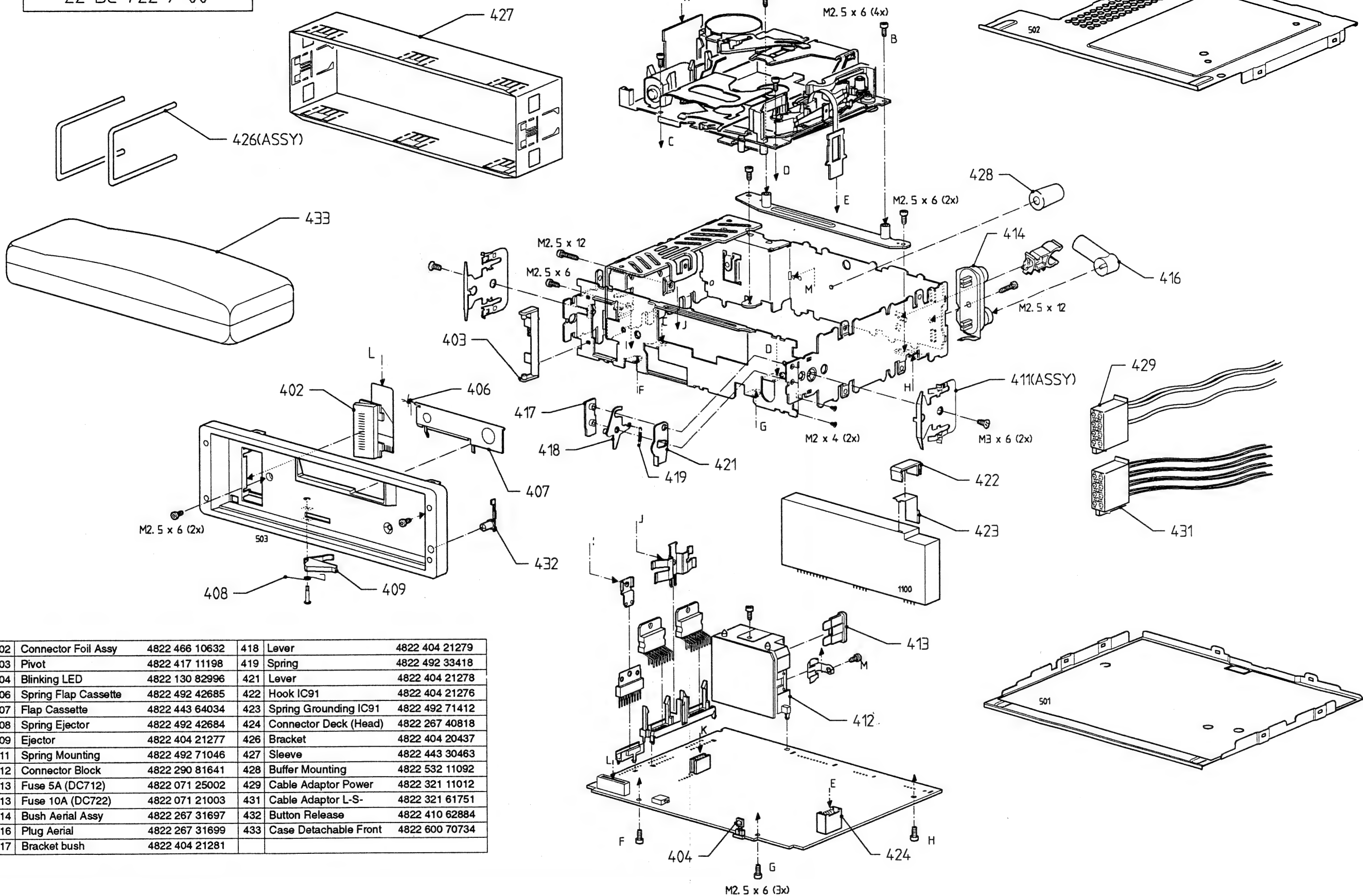


1	Cover Front DC712	4822 459 50814	19	Button Small 5	4822 410 62904
1	Cover Front DC722	4822 459 50815	20	Button Small 6	4822 410 62905
2	Cover Back	4822 421 20055	21	Button Scan/Man	4822 410 62915
4	Button Volume/Up	4822 410 62886	22	Button AM/Random	4822 410 62917
5	Button Volume/Down	4822 410 62887	23	Button UP	4822 410 62906
6	Button On/Off	4822 410 62888	24	Button Down	4822 410 62907
7	Button Bass/Balance	4822 410 62889	25	Button FM/Dolby	4822 410 62916
8	Button Treble/Fader	4822 410 62891	26	Button AST	4822 410 62908
9	Button Preset 1	4822 410 62892	27	Button Eject	4822 410 62909
10	Button Preset 2	4822 410 62893	28	Button FFW	4822 410 62911
11	Button Preset 3	4822 410 62894	29	Button FRW	4822 410 62912
12	Button Preset 4	4822 410 62895	30	Button TA	4822 410 62913
13	Button Preset 5	4822 410 62896	31	Button SRC	4822 410 62914
14	Button Preset 6	4822 410 62897	33	Glass Protect LCD	4822 381 11443
15	Button Small 1	4822 410 62885	36	Foam	4822 466 10633
16	Button Small 2	4822 410 62901	38	Foam	4822 466 10634
17	Button Small 3	4822 410 62902		Complete Front DC712	4822 459 50798
18	Button Small 4	4822 410 62903		Complete Front DC722	4822 459 50808

22DC712/00 22DC722/00

22 DC 712 / 00
22 DC 722 / 00

TAPE-DECK SCA 4.4





402	Connector Foil Assy	4822 466 10632	418	Lever	4822 404 21279
403	Pivot	4822 417 11198	419	Spring	4822 492 33418
404	Blinking LED	4822 130 82996	421	Lever	4822 404 21278
406	Spring Flap Cassette	4822 492 42685	422	Hook IC91	4822 404 21276
407	Flap Cassette	4822 443 64034	423	Spring Grounding IC91	4822 492 71412
408	Spring Ejector	4822 492 42684	424	Connector Deck (Head)	4822 267 40818
409	Ejector	4822 404 21277	426	Bracket	4822 404 20437
411	Spring Mounting	4822 492 71046	427	Sleeve	4822 443 30463
412	Connector Block	4822 290 81641	428	Buffer Mounting	4822 532 11092
413	Fuse 5A (DC712)	4822 071 25002	429	Cable Adaptor Power	4822 321 11012
413	Fuse 10A (DC722)	4822 071 21003	431	Cable Adaptor L-S-	4822 321 61751
414	Bush Aerial Assy	4822 267 31697	432	Button Release	4822 410 62884
416	Plug Aerial	4822 267 31699	433	Case Detachable Front	4822 600 70734
417	Bracket bush	4822 404 21281			

Miscellaneous			⏏		
1100	4822 214 52122	IC91 MODULE	2279	4822 126 12722	220nF 10% X7R 25V
1250	4822 267 40818	TCS83S9V1 BURNDY	2280	4822 122 33496	100nF 10% X7R 63V
1800	4822 242 81588	CSACS12,0MT FRONT	2281	5322 126 12698	4,7nF 2%
1800	4822 276 13453	SWITCH	2282	4822 122 33496	100nF 10% X7R 63V
1801	4822 130 91288	DISPLAY	2283	4822 122 33128	15nF 10% X7R 63V
1802	4822 256 30483	LAMP HOLDER	2284	4822 122 33128	15nF 10% X7R 63V
1802	4822 267 51286	CONNECTOR FRONT	2285	4822 122 33496	100nF 10% X7R 63V
1804	4822 276 13454	SWITCH	2288	4822 126 12722	220nF 10% X7R 25V
1805	4822 276 13454	SWITCH	2290	4822 126 12722	220nF 10% X7R 25V
1806	4822 276 13454	SWITCH	2291	4822 124 23504	2.2μF 20% 50V
1807	4822 276 13454	SWITCH	2292	4822 122 32542	47nF 10% X7R 63V
1808	4822 276 13454	SWITCH	2293	5322 126 10223	4,7nF 10% X7R 63V
1809	4822 276 13454	SWITCH	2294	5322 126 10223	4,7nF 10% X7R 63V
1810	4822 276 13454	SWITCH	2295	4822 122 33342	33nF 10% X7R 63V
1811	4822 276 13454	SWITCH	2350	4822 124 23504	2.2μF 20% 50V
1812	4822 276 13454	SWITCH	2351	4822 124 23504	2.2μF 20% 50V
1813	4822 276 13454	SWITCH	2352	5322 122 34123	1nF 10% X7R 50V
1814	4822 276 13454	SWITCH	2353	5322 122 34123	1nF 10% X7R 50V
1815	4822 276 13454	SWITCH	2354	4822 124 22646	47μF 20% 16V
1818	4822 276 13454	SWITCH	2355	4822 124 41017	10μF 16V
1819	4822 276 13454	SWITCH	2366	5322 122 32654	22nF 10% X7R 63V
1820	4822 276 13454	SWITCH	2371	4822 126 10525	8,2nF 10% X7R 63V
1821	4822 276 13454	SWITCH	2372	4822 126 12722	220nF 10% X7R 25V
1822	4822 276 13454	SWITCH	2373	4822 122 33496	100nF 10% X7R 63V
1823	4822 276 13454	SWITCH	2374	4822 122 33342	33nF 10% X7R 63V
1824	4822 276 13454	SWITCH	2375	4822 122 32646	5,6nF 10% X7R 50V
1825	4822 276 13454	SWITCH	2376	4822 126 12722	220nF 10% X7R 25V
1826	4822 276 13454	SWITCH	2377	4822 126 10525	8,2nF 10% X7R 63V
1827	4822 276 13454	SWITCH	2378	4822 122 33496	100nF 10% X7R 63V
1828	4822 276 13454	SWITCH	2379	4822 122 33342	33nF 10% X7R 63V
1829	4822 276 13454	SWITCH	2380	4822 122 32646	5,6nF 10% X7R 50V
1830	4822 276 13454	SWITCH	2381	5322 122 34098	10nF 10% X7R 63V
1831	4822 276 13454	SWITCH	2382	4822 124 40201	1000μF 20% 16V
1832	4822 276 13454	SWITCH	2383	4822 124 22646	47μF 20% 16V
1833	4822 276 13454	SWITCH	2384	4822 124 80453	100μF 20% 10V
1835	4822 134 41158	LAMP GREEN	2385	4822 124 23504	2.2μF 20% 50V
1836	4822 134 41158	LAMP GREEN	2386	4822 124 23504	2.2μF 20% 50V
1837	4822 134 41157	HRS-7219 ASSY	2387	4822 124 23504	2.2μF 20% 50V
1838	4822 134 41157	HRS-7219 ASSY	2388	4822 124 23504	2.2μF 20% 50V
			2389	4822 124 41017	10μF 16V
⏏			2390	4822 124 41017	10μF 16V
2011	5322 122 34098	10nF 10% X7R 63V	2391	4822 124 41017	10μF 16V
2012	5322 122 34098	10nF 10% X7R 63V	2392	4822 124 41017	10μF 16V
2013	5322 126 10223	4,7nF 10% X7R 63V	2393	5322 126 10223	4,7nF 10% X7R 63V
2014	5322 126 10223	4,7nF 10% X7R 63V	2403	5322 122 32448	10pF 5% 50V
2015	5322 122 34123	1nF 10% X7R 50V	2404	4822 126 12722	220nF 10% X7R 25V
2250	4822 122 33575	220pF 5% NPO 50V	2405	5322 116 80853	560pF 5% NPO 63V
2251	4822 122 33575	220pF 5% NPO 50V	2406	4822 124 23504	2.2μF 20% 50V
2252	4822 122 33575	220pF 5% NPO 50V	2407	5322 122 32452	47pF 5% NPO 63V
2253	4822 122 33575	220pF 5% NPO 50V	2408	4822 122 33515	82pF 5% NPO 63V
2254	5322 122 34098	10nF 10% X7R 63V	2410	5322 122 31863	330pF 5% NPO 50V
2255	5322 122 34098	10nF 10% X7R 63V	2415	4822 122 32614	1.2nF 10% X7R 50V
2259	4822 124 80453	100μF 20% 10V	2416	5322 122 31865	1,5nF 10% X7R 63V
2265	4822 124 80453	100μF 20% 10V	2417	5322 122 34098	10nF 10% X7R 63V
2266	5322 122 32654	22nF 10% X7R 63V	2418	4822 124 23401	4,7μF 20% 25V
2268	4822 124 41017	10μF 16V	2419	4822 126 12722	220nF 10% X7R 25V
2269	4822 124 41017	10μF 16V	2420	5322 122 33538	150pF 2% NPO 63V
2275	5322 126 12698	4,7nF 2%	2421	5322 122 33538	150pF 2% NPO 63V
2276	4822 122 33496	100nF 10% X7R 63V	2422	5322 122 33538	150pF 2% NPO 63V
2278	4822 126 12722	220nF 10% X7R 25V	2423	5322 122 33538	150pF 2% NPO 63V

⏏			⏏		
2424	5322 122 34123	1nF 10% X7R 50V	2830	4822 124 22646	47μF 20% 16V
2425	4822 122 32542	47nF 10% X7R 63V	2836	5322 126 10223	4,7nF 10% X7R 63V
2426	4822 122 32542	47nF 10% X7R 63V	2837	4822 122 33342	33nF 10% X7R 63V
2427	4822 122 33172	390pF 5% NPO 50V	2845	5322 122 34098	10nF 10% X7R 63V
2428	5322 122 32654	22nF 10% X7R 63V			
2553	5322 126 10223	4,7nF 10% X7R 63V	3004	4822 051 20223	22K 5% 0,1W
2554	4822 122 33496	100nF 10% X7R 63V	3012	4822 051 20102	1K 5% 0,1W
2555	5322 124 41938	47μF 6V3	3013	4822 051 20223	22K 5% 0,1W
2564	4822 124 40201	1000 μF 20%	3014	4822 051 20104	100K 5% 0,1W
2570	4822 124 80719	2200μF 20% 16V	3252	4822 051 20471	470Ω 5% 0,1W
2570	4822 124 40201	1000 μF 20% DC712	3253	4822 051 20471	470Ω 5% 0,1W
2575	5322 122 32531	100pF 5% NPO 50V	3254	4822 051 20334	330K 5% 0,1W
2576	5322 122 32531	100pF 5% NPO 50V	3255	4822 051 20334	330K 5% 0,1W
2577	5322 126 10223	4,7nF 10% X7R 63V	3257	4822 051 20822	8K20 5% 0,1W
2580	4822 124 23281	33μF 20% 16V	3258	4822 051 20153	15K 5% 0,1W
2582	5322 126 10223	4,7nF 10% X7R 63V	3259	4822 051 20822	8K20 5% 0,1W
2583	5322 124 41938	47μF 6V3	3260	4822 100 11212	2K2 30%lin 0,1W
2584	4822 122 33496	100nF 10% X7R 63V	3261	4822 100 11212	2K2 30%lin 0,1W
2589	4822 124 80719	2200μF 20% 16V	3262	4822 051 20333	33K 5% 0,1W
2590	5322 126 10223	4,7nF 10% X7R 63V	3263	4822 051 20183	18K 5% 0,1W
2591	5322 126 10223	4,7nF 10% X7R 63V	3275	4822 051 20184	180K 5% 0,1W
2592	5322 126 10223	4,7nF 10% X7R 63V	3276	4822 117 10507	24K 1% 0,1W
2593	5322 126 10223	4,7nF 10% X7R 63V	3277	4822 051 20152	1K50 5% 0,1W
2596	5322 122 32531	100pF 5% NPO 50V	3278	4822 051 20274	270K 5% 0,1W
2600	5322 122 34123	1nF 10% X7R 50V	3279	4822 117 10507	24K 1% 0,1W
2601	5322 124 41938	47μF 6V3	3280	4822 051 20274	270K 5% 0,1W
2602	4822 122 33496	100nF 10% X7R 63V	3281	4822 051 20184	180K 5% 0,1W
2603	4822 124 41017	10μF 16V	3287	4822 051 20008	0Ω JUMP. (0805)
2604	5322 122 32658	22pF 5% 50V	3292	4822 051 20334	330K 5% 0,1W
2605	5322 122 32452	47pF 5% NPO 63V	3299	4822 051 20008	0Ω JUMP. (0805)
2606	4822 122 33496	100nF 10% X7R 63V	3300	4822 051 20473	47K 5% 0,1W
2607	4822 122 33515	82pF 5% NPO 63V	3302	4822 051 20008	0Ω JUMP. (0805)
2612	5322 122 32658	22pF 5% 50V	3305	4822 117 10508	1Ω 5%
2615	4822 122 33342	33nF 10% X7R 63V	3350	4822 051 20472	4K70 5% 0,1W
2617	4822 122 33342	33nF 10% X7R 63V	3351	4822 051 20472	4K70 5% 0,1W
2618	5322 122 32654	22nF 10% X7R 63V	3352	4822 051 20109	10Ω 5% 0,1W
2619	4822 122 33496	100nF 10% X7R 63V	3353	4822 051 20153	15K 5% 0,1W
2622	5322 122 34123	1nF 10% X7R 50V	3354	4822 051 20472	4K70 5% 0,1W
2623	4822 122 33496	100nF 10% X7R 63V	3355	4822 051 20473	47K 5% 0,1W
2627	5322 122 34123	1nF 10% X7R 50V	3356	4822 051 20101	100Ω 5% 0,1W
2629	5322 126 10223	4,7nF 10% X7R 63V	3357	4822 051 20222	2K20 5% 0,1W
2630	5322 122 34123	1nF 10% X7R 50V	3358	4822 051 20393	39K 5% 0,1W
2632	5322 122 32268	470pF 10% 50V	3359	4822 051 20472	4K70 5% 0,1W
2800	4822 122 32542	47nF 10% X7R	3360	4822 051 20473	47K 5% 0,1W
2800	5322 122 33869	15pF 5% NPO FRONT	3361	4822 051 20101	100Ω 5% 0,1W
2801	4822 124 40201	1000μF 20% 16V	3362	4822 051 20222	2K20 5% 0,1W
2801	5322 122 33869	15pF 5% NPO FRONT	3363	4822 051 20393	39K 5% 0,1W
2802	4822 126 12722	220nF 10% X7R	3366	4822 051 20222	2K20 5% 0,1W
2802	4822 126 12783	100nF 10% 25V FRONT	3378	4822 051 20222	2K20 5% 0,1W
2803	4822 124 22646	47μF 20% 16V	3379	4822 051 20102	1K 5% 0,1W
2803	4822 126 12722	220nF 10% X7R FRONT	3380	4822 051 20102	1K 5% 0,1W
2804	4822 126 12722	220nF 10% X7R FRONT	3381	4822 051 20223	22K 5% 0,1W
2804	5322 124 41938	47μF 6V3	3382	4822 051 20222	2K20 5% 0,1W
2805	4822 126 12783	100nF 10% 25V	3383	4822 051 20223	22K 5% 0,1W
2806	4822 124 22861	47μF 16V	3384	4822 051 20103	10K 5% 0,1W
2812	5322 124 41938	47μF 6V3	3385	4822 051 20103	10K 5% 0,1W
2819	5322 122 32654	22nF 10% X7R 63V	3386	4822 051 20103	10K 5% 0,1W
2822	5322 122 34098	10nF 10% X7R 63V	3388	4822 051 20103	10K 5% 0,1W
2823	4822 124 41017	10μF 16V	3390	4822 051 20109	10Ω 5% 0,1W
2829	5322 122 32654	22nF 10% X7R 63V			

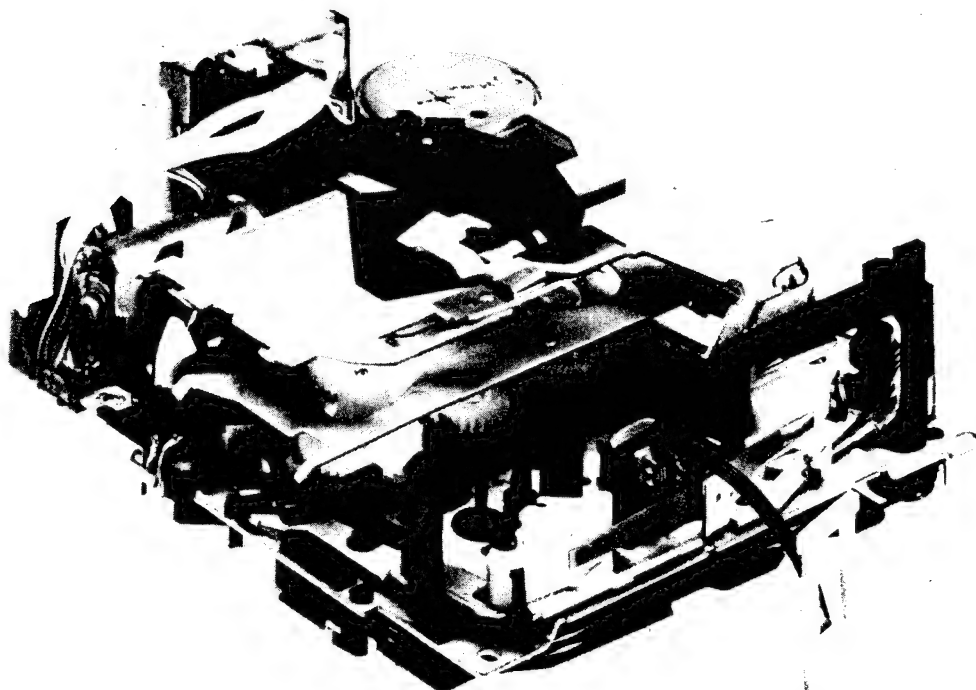
22DC712/00 22DC722/00

 		
7251	4822 209 32744	TEA0675T/V1
7257	4822 209 83159	LA2000
7258	4822 130 60511	BC847B
7350	4822 130 42353	BFS19
7351	4822 130 42353	BFS19
7354	4822 209 32745	TEA6320/V1
7355	4822 209 31981	SAA6579T/V1
7356	4822 209 32742	TL074IN
7357	4822 130 60511	BC847B
7362	5322 130 60508	BC857B
7363	5322 209 11102	HEF4052BT
7550	4822 209 31132	TDA7374V
7551	4822 209 31132	TDA7374V
7552	4822 130 60511	BC847B
7553	4822 130 60511	BC847B
7554	4822 130 60511	BC847B
7555	5322 130 60508	BC857B
7602	5322 209 10468	HEF4521BP
7603	4822 209 32743	MSM6307GS
7609	4822 130 60511	BC847B
7800	4822 209 32687	TDA3602/N2
7800	4822 209 32774	P87C528-FAM3
7801	5322 130 41983	BC858B
7802	5322 130 41983	BC858B
7803	4822 130 42615	BC817-40
7803	4822 130 62651	ON4414
7804	4822 130 42615	BC817-40
7805	4822 130 42615	BC817-40
7805	4822 130 60511	BC847B
7806	4822 130 42615	BC817-40
7807	5322 209 11129	PCF8576T
7809	5322 130 44786	BD675

Service
Service
Service

Service Manual

12 V 



MECHANICAL SPECIFICATION

Operating positions:	Any position from horizontal to 45° standing vertically on the rear side.
Operating temperature:	-20°C to +70°C
Tape speed:	4,76 cm/sec
Wow and flutter:	< 0,5% unweighted < 0,3% weighted
Winding time:	
Test tape: RCA 118 (C60)	< 110 sec
Eject and loading time:	< 2 sec

ELECTRICAL SPECIFICATION

Voltage:	min 10,6 V max 16,0 V
Current - playback:	200 mA
Current - fast wind:	150 mA
Current - eject, standby:	100 µA
Hold in voltage:	8,0 V
Capstan motor:	14,4 V
Servo motor:	2 V DC Play 11,5 V DC Fast, Servo
Playback Crosstalk	
ch. 1 - 2 / 3 - 4	> 36 dB
ch. 2 - 3	> 46 dB

FEATURES

The SCA-4.4 tape deck is usable in several sets. Most of the control functions depend on the hard- and software-configuration of the set in which the deck is installed.

The set µC can control soft eject, emergency eject, standby mode, reverse function, MSS, ME/FE and DOLBY indication.

Some versions of the deck could be equipped with a grooved head and/or a preamplifier circuit.

HANDLING AND DEMOUNTING INSTRUCTIONS

GENERAL

- Protect the tape deck against ESD !
- Plastic catches and snap connections must be released careful with screwdriver or tweezers.
- Cables must be laid in the defined cable guidings after mounting.
- For lubrication see indications in the exploded view.
- To clean tape transport and head only use moist cleaning tapes or piece of cloth, take care that no fluid (alcohol) drops into the bearing.
- For transport lift/carrier assy must be in eject position, do not carry the deck by touching the lift/carrier.
- Use a screwdriver 2,5 mm with insulated shaft for adjusting drift.
- Screw the deck into the set in order: Front right, front left, rear left, rear right.

DEMOUNTING

1. Carrier/lift (44)
 - 1.1 Lift in eject position - put leg of eject spring (12) into mounting position acc. fig. 8 and fig. 2 - J
 - 1.2 Lift in play position - unclamp cassette holder (49) from eject lever (48) with a left-upwards motion acc. fig. 1-B
 - 1.3 Lift in eject position - push plastic hook (fig. 1-D) and pull out eject lever, remember position of ejector spring (55) and switching pin (54) for re-assembly later on
 - 1.4 Release fixation lever (fig. 1-F) by clicking out in left direction and then turn to the right
 - 1.5 Lift in mid position - take out carrier and lift by releasing plastic hooks at the left (fig. 1-G)
2. Head support
 - 2.1 Take out carrier/lift according 1.
 - 2.2 Remove head carrier spring (37)
 - 2.3 Turn head support fixation lever acc. fig. 3-A
 - 2.4 Position pin of switching lever (20) to max. left point, see fig. 3-detail I
 - 2.5 Release plastic snapper (fig. 3-H) and take out head support assembly
!!! TAKE CARE NOT TO BENT THE HEAD CARRIER !!!
 - 2.6 Press plastic fixation (fig. 3-detail E,F) and take out magnetic head
 - 2.7 Push pressure spring (27) acc. fig. 3-D and move it out
 - 2.8 Release plastic hooks (fig. 3-B,C) to pull pinch rollers (45+68) out
 - 2.9 Take off anchor spring (13), rotate anchor (2) 90°degrees to take it out (fig. 4-A,B,C)
3. Capstan motor (32)

Remove belt (30) from driving wheel, desolder connection cables, unscrew the two torx screws at the bottom of chassis and take out capstan motor
!!! TAKE CARE OF CORRECT AND UNTWISTED MOUNTING OF THE BELT !!!
4. Servo motor (14)

Desolder connection cables and lever up motor out of its clamps (fig. 2-F,G)
5. Clutch assy (57-59)
 - 5.1 Remove servo motor acc. 4.
 - 5.2 Cut disk (65) and remove it (must be renewed)
 - 5.3 Pull clutch from the axle (fig. 2-H,I)
6. Anchor holder (8) and magnet double (1)
 - 6.1 Desolder cables of magnet
 - 6.2 Swivel anchor holder counter-clockwise and press it off applying force near the pivoting point
 - 6.3 Release plastic clamps of magnet holder and press magnet out from top of the chassis (fig. 4-E)
7. Driving belt (30), flywheels (23) and bearings (70)
 - 7.1 Release pivot plate (35) by turning the plastic hooks acc. fig. 5-A,B
 - 7.2 Remove pivot plate and driving belt
 - 7.3 Pull out flywheels
 - 7.4 Press bearings out of plastic housings from top side of chassis plate, use a plastic tool with diameter 4mm in order not to damage the housings
 - 7.5 After mounting new flywheels, bearings or pivot plate you have to test wow and flutter because every deck is adjusted individual for these components. If the values of wow and flutter are out of specification, you have to exchange complete deck !
 - 7.6 Degrease capstan axis after re-mounting the flywheels
8. Connection wheel (5), take up wheels (6), backtension springs (69)
 - 8.1 Take out carrier/lift acc. 1.
 - 8.2 Lever up connection wheel from axle (must be renewed)
 - 8.3 Cut disks (65) and remove them (must be renewed)
 - 8.4 Unclamp and pull up wheels with puller (fig. 2-A,B)
 - 8.5 Take out backtension springs
9. ME/CR Switch (60)
 - 9.1 Desolder connection cables
 - 9.2 Push with a small pin through the hole at the bottom of the chassis, directly under the switch

10. ON/OFF Switch (26)
- 10.1 Desolder connection cables
- 10.2 Lever up switch or push with a small pin through the hole at the bottom of the chassis, directly under the switch if servo motor and clutch were removed previously
11. Control pins (16), gear lever (17), play reverse lever (18)
- 11.1 Remove flywheels acc. 7
- 11.2 Remove play reverse lever
- 11.3 Put control pins into mounting position acc. fig.6-D,E
- 11.4 Take out gear lever
- 11.5 Pull out control pins
12. Switching lever (20), swivel wheel assembly (7,15,43)
- 12.1 Release spring (53) from black plastic pin
- 12.2 Turn switching lever acc. fig.7-A
- 12.3 Lever up switching lever from axle
- 12.4 Remove connection wheel acc. 8
- 12.5 Take out swivel wheel assembly
13. Switching pin (54), transport rod (25), latch (21)
- 13.1 Remove ON/OFF Switch acc. 10
- 13.2 Lever up switching pin from axle
- 13.3 Remove switching lever acc. 12
- 13.4 Move out transport rod and latch

TOOLS REQUIRED

Test cassette SBC 420	4822 397 30071
Test cassette SBC 419	4822 397 30069
Friction test cassette	4822 395 30054
Puller for clutch (fig.2)	4822 395 60039

ADJUSTMENTS

TORQUE OF REELS (FRICTION)

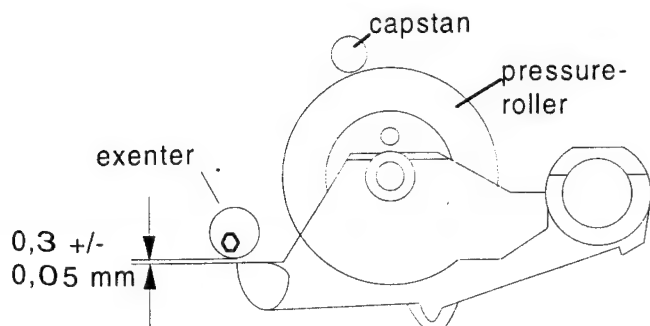
Adjust potmeter pos. 3409 until friction test cassette shows 9,5 +/- 1,5 mNm in NOR direction (after 2 minutes) and 8,5 +/- 1,5 mNm in REV direction. Backtension must be 0,3 to 0,7 mNm.
If values deviate check lubrication, clutch, take up wheels and backtension springs.

WOW AND FLUTTER, TAPE SPEED

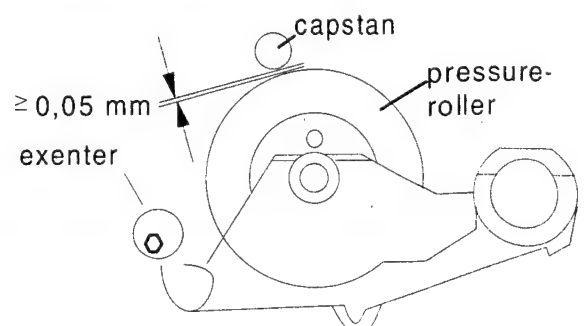
Connect wow and flutter meter to loudspeaker outputs and play the 3150 Hz signal track of test cassette SBC 420. Value should be max. 0,5% (unweighted).
If value deviates check motors, pressure rollers, flywheels, belt, pulley and backtension springs.
Tape speed can be adjusted with motor potentiometer A (see fig.8). Use a screwdriver with insulated shaft !

PRESSURE ROLLER / CAPSTAN (see figures below)

Adjust clearance play-NOR position between pressure roller and stop head carrier



Adjust clearance FFW position between pressure roller and capstan



EJECTOR 48, HOLDER 49, LIFT 44

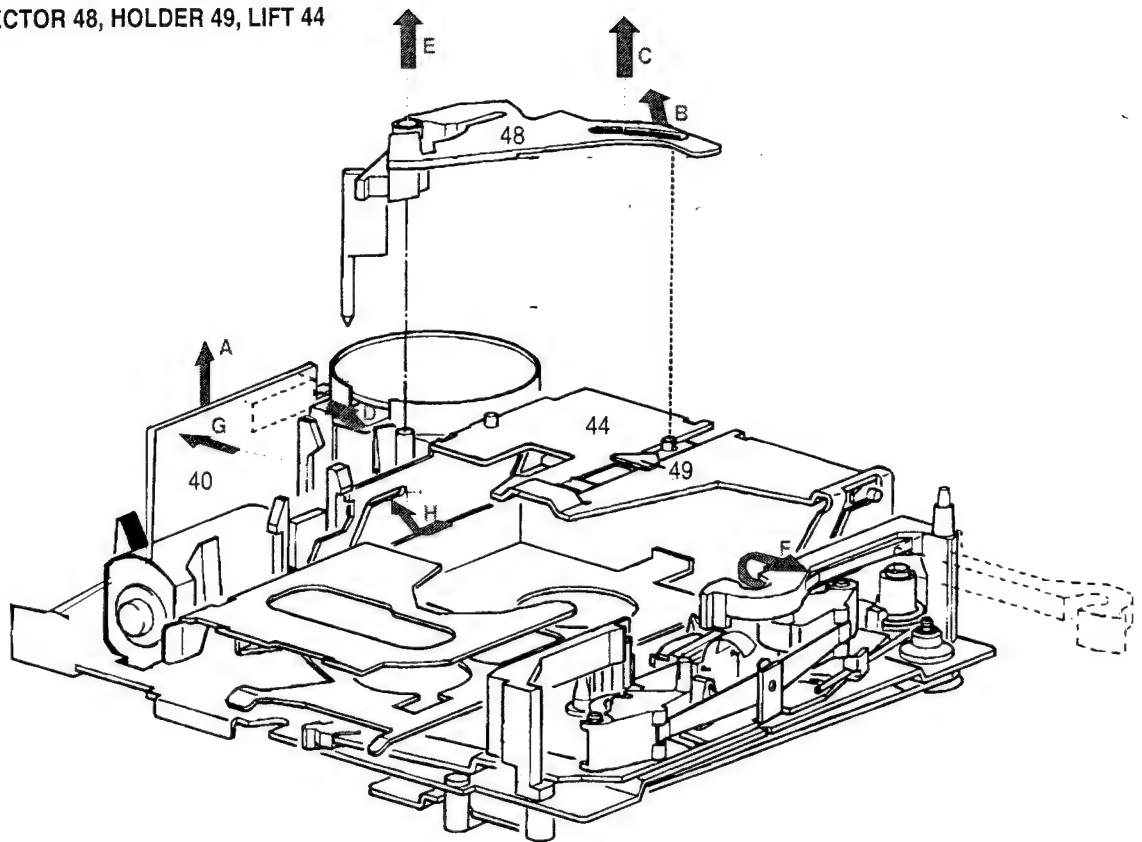


Fig. 1

CLUTCH 59, SWITCH 60, GEAR WHEEL 5, CARRIER 6

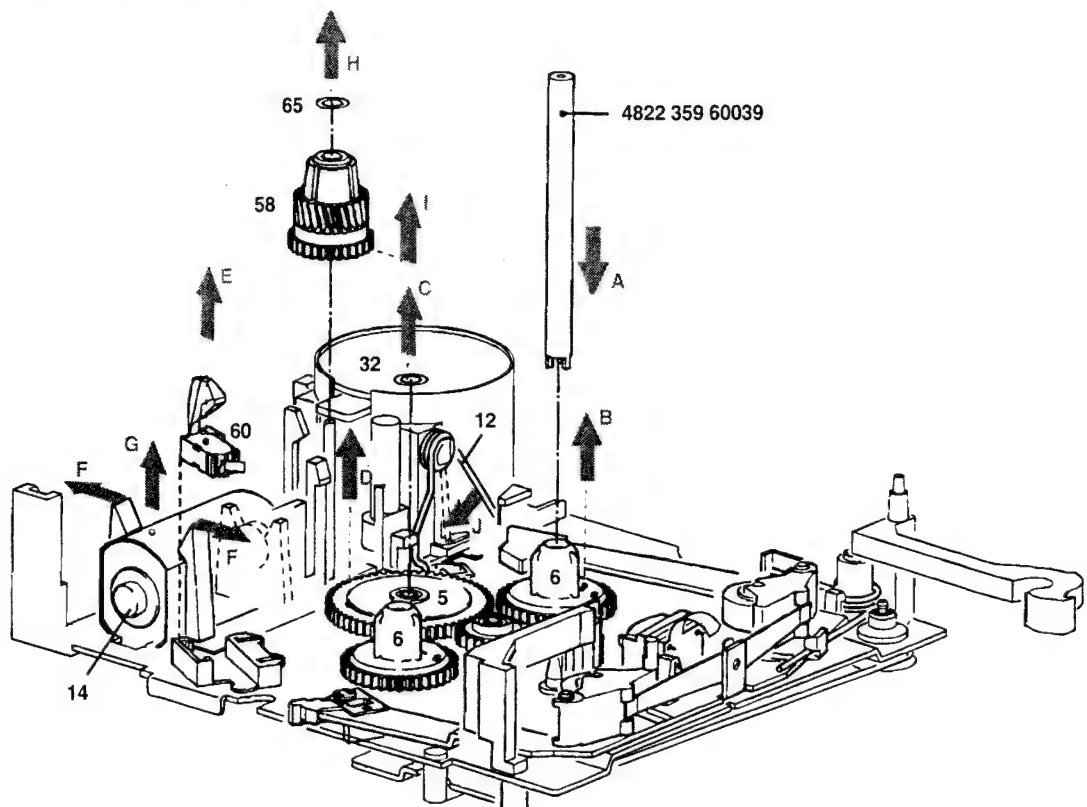
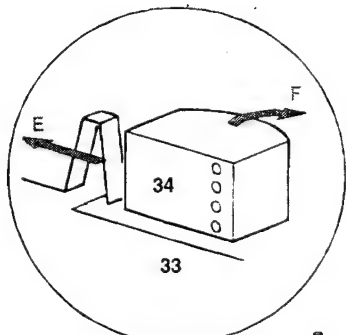
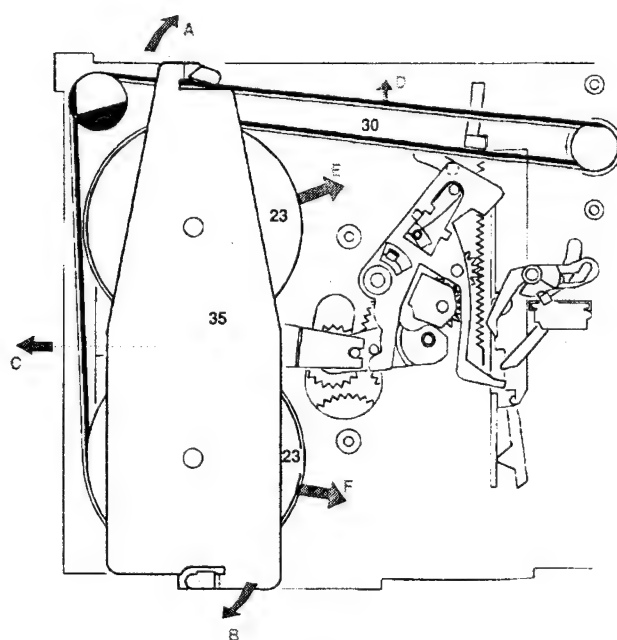
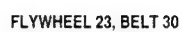


Fig. 2



ANCHOR 3/5, RELAY 1



SCA-4.4

SEGMENT 16, BRACKET 17, BEARING 70

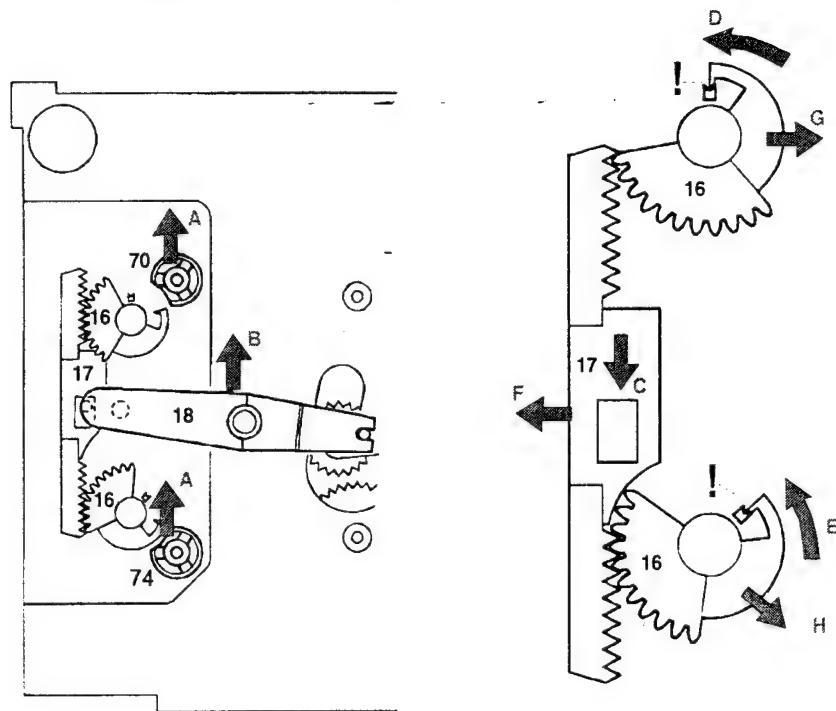


Fig. 6

SWITCH 26, SWIVEL GEAR 7, LEVER 20

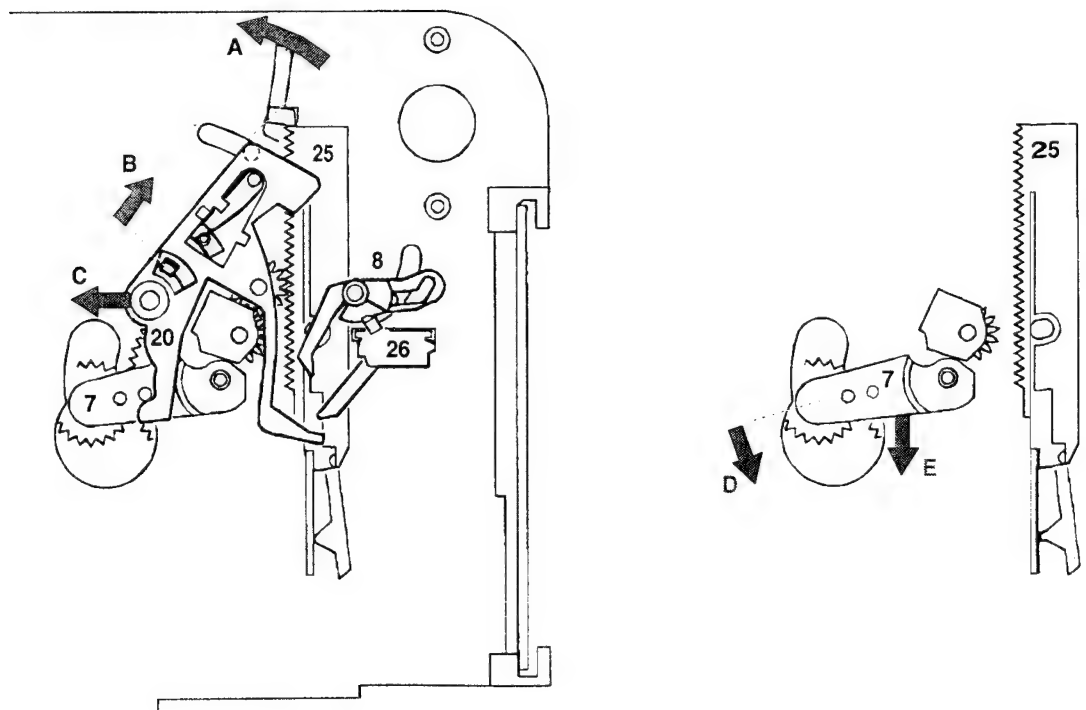


Fig. 7

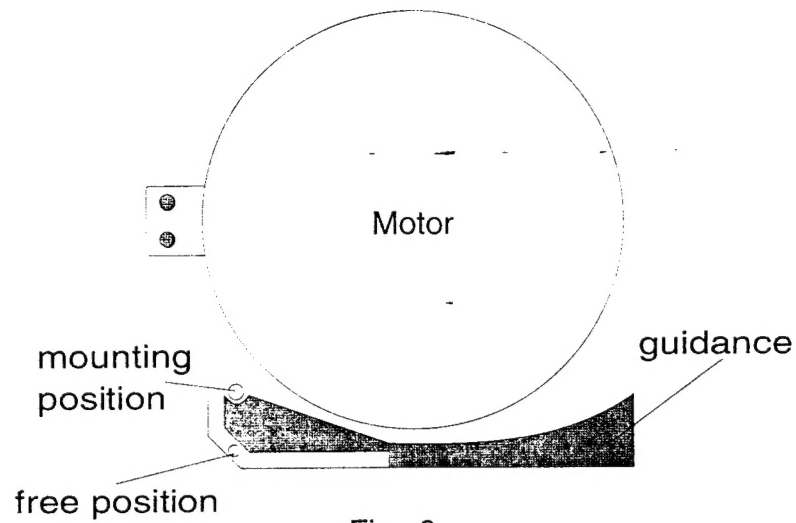
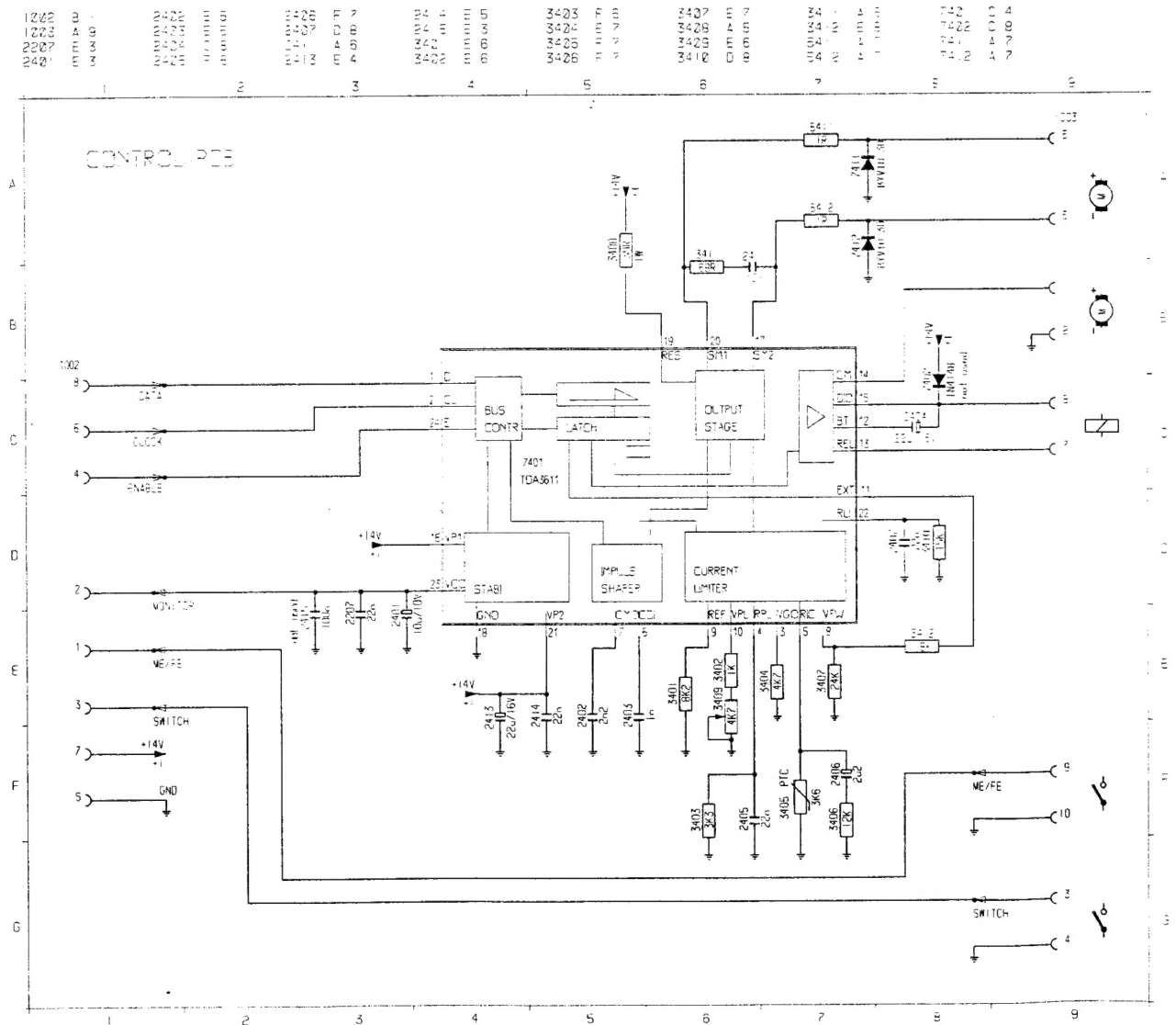


Fig. 8



MEASUREMENTS ON CONTROL PCB

ME/FE: 0,0 V (FE) / 5,0 V (ME/CR)

ON/OFF: 0,0 V (ON) / 5,0 V (OFF)

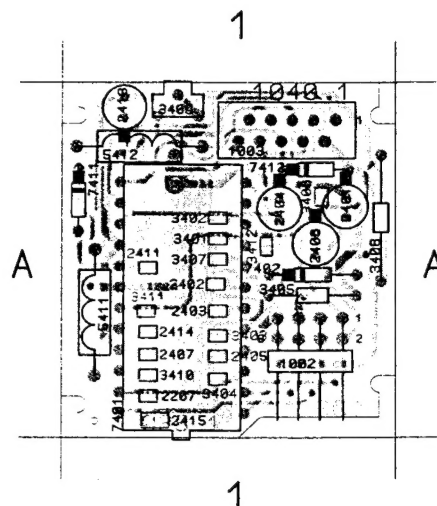
Pos. 7401 TDA 3611

- 1: 5,0 V
- 2: 5,0 V
- 3: 0,7 V / 0,0 V (Sb)
- 4: 0,8 V (PN) / 0,9 V (PR) / 0,3 V (W) / 0,0 V (Sb)
- 5: 0,8 V (PN) / 1,0 V (PR) / 0,4 V (W) / 0,0 V (Sb) / 0,1 V (TA)
- 6: 0,8 V (PN) / 1,0 V (PR) / 0,4 V (W) / 0,0 V (Sb) / 0,1 V (TA)
- 7: 0,7 V (P) / 1,8 V (W) / 0,0 V (Sb) / 0,6 V (TA)
- 8: 3,4 V / 0,0 V (Sb)
- 9: 1,2 V / 0,0 V (Sb)
- 10: 0,5 V / 0,0 V (Sb)
- 11: 3,4 V / 0,0 V (Sb)
- 12: 12,0 V
- 13: 0,5 V / 12,0 V (Sb)
- 14: 0,0 V / 11,5 V (P)
- 15: 11,5 V / 12,0 V (Sb)
- 16: 12,0 V
- 17: 0,1 V (PN) / 2,4 V (PR) / 0,0 V (WN) / 12,0 V (WR) / 0,0 V (Sb)
- 18: GND
- 19: 12,0 V / 8,5 V (P)
- 20: 2,4 V (PN) / 0,1 V (PR) / 12,0 V (WN) / 0,0 V (WR) / 0,0 V (Sb)
- 21: 12,0 V
- 22: 3,6 V (P) / 1,3 V (W) / 0,0 V (Sb)
- 23: 5,0 V
- 24: 5,0 V

All values measured DC - GND

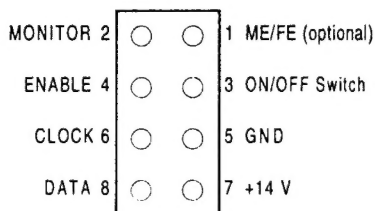
(P) = Play mode both directions
(W) = Wind mode both directions
(PN) = Play NOR direction
(PR) = Play REV direction
(WN) = Wind NOR direction
(WR) = Wind REV direction
(Sb) = Standby
(TA) = Traffic announcement

1802 A 1	2413 A 1	3489 A 1
1803 A 1	2414 A 1	3418 A 1
2207 A 1	2415 A 1	3411 A 1
2401 A 1	3401 A 1	3412 A 1
2402 A 1	3402 A 1	5411 A 1
2403 A 1	3403 A 1	5412 A 1
2404 A 1	3404 A 1	7401 A 1
2405 A 1	3405 A 1	7402 A 1
2406 A 1	3406 A 1	7411 A 1
2407 A 1	3407 A 1	7412 A 1
2411 A 1	3408 A 1	

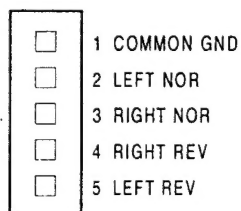


CONNECTORS

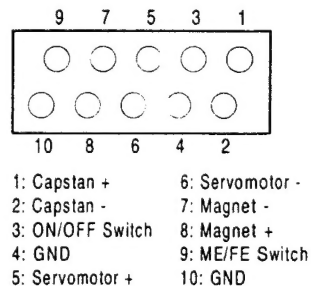
Control Connector
(View onto Radio-PCB)



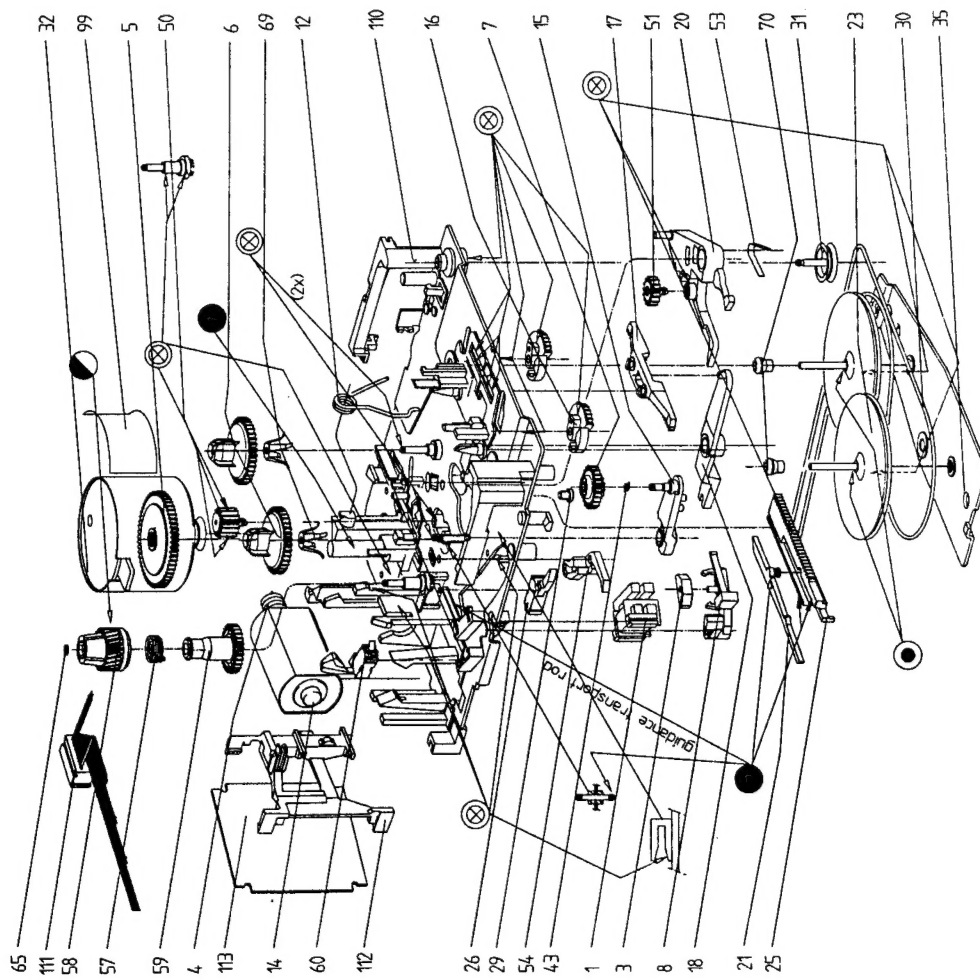
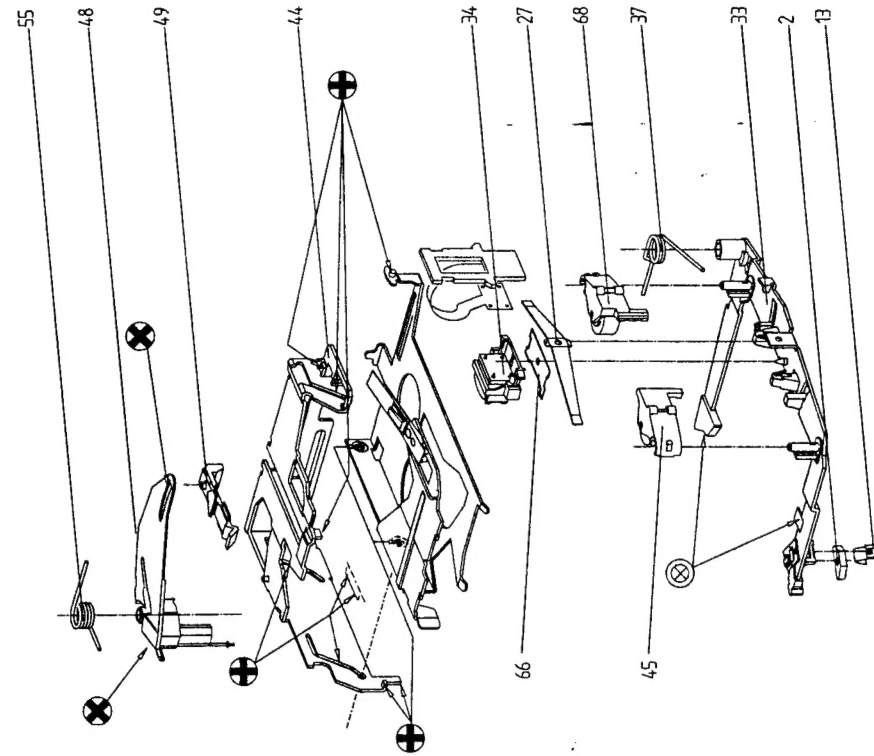
Head Connector
(View onto Radio-PCB)



Deck Connector (Pos.1003)
(View onto Control-PCB)



Front of Radio ↓



- ⊗ Gleitmo 805 K
- ⊙ Mobil SHC 634
- Contact Oel
- ⊗ PNP 65
- ⊗ Topas L30
- ⊙ Gleitmo 585 K
- SM30 TF

MECHANICAL PARTS

1	4822 281 11051	DOUBLE
2	4822 404 21083	ANCHOR ON SUPPORT 33
3	4822 404 21084	ANCHOR IN HOLDER 8
5	4822 522 32868	WHEEL IDLER
6	4822 528 10776	CARRIER
7	4822 528 70658	ASSY
8	4822 404 21087	FOR ANCHOR 2
1	4822 492 70556	FOR ANCHOR 2
14	4822 361 30297	SERVO ASSY
16	4822 522 32869	NORMAL/REVERSE
17	4822 404 21089	DRIVING 16
20	4822 404 21086	ASSY SERVO GEARWHEEL
23	4822 528 81378	FLYWHEEL
26	4822 277 11215	ON/OFF
27	4822 492 70557	FOR PRES. ROLLER 45
29	4822 502 12548	FIX MOTOR 32
30	4822 358 31053	BELT, DRIVING
31	4822 528 81144	DIVERTING BELT
32	4822 361 30294	CAPSTAN
33	4822 404 21088	FOR HEAD,PRES.ROLLR
34	4822 249 30157	WITH FLEXPRINT
44	4822 466 82631	FOR CASSETTE
45	4822 528 81377	REVERSE
48	4822 404 21091	EJECT
49	4822 404 21092	HOLDING CASSETTE
50	4822 522 32871	COUPLING
59	4822 522 10435	ASSY
60	4822 277 11216	ME/CR
65	4822 532 52348	FOR CARRIER CLUTCH
68	4822 528 81449	NORMAL
69	4822 492 70926	UNDER CARRIER
70	4822 520 30539	FOR FLYWHEEL
111	4822 321 61954	CABLE, CONNECT
112	4822 256 92048	FOR PCB
113	4822 214 52077	PCB KOMPL.

ELECTRICAL PARTS

2207	5322 122 32654	22NF10%X7R	63V
2401	4822 124 22748	10UF	10V
2402	4822 122 33127	2,2NF10%X7R	63V
2403	4822 122 33178	1NF 20% X7R	50V
2404	4822 124 23279	22UF20%	16V
2405	5322 122 32654	22NF10%X7R	63V
2406	4822 124 41013	2,2UF	25V
2407	5322 122 32654	22NF10%X7R	63V
2411	4822 122 33177	10NF 20% X7R	50V
2413	4822 124 23279	22UF20%	16V
2414	5322 122 32654	22NF10%X7R	63V
3401	4822 051 20822	8K20	5% 0,1W
3402	4822 051 20102	1K00	5% 0,1W
3403	4822 051 20332	3K30	5% 0,1W
3404	4822 051 20472	4K70	5% 0,1W
3405	4822 116 40241	3K6	PTC
3406	4822 051 20123	12K00	5% 0,1W
3407	4822 051 20243	24K00	5% 0,1W
3408	4822 053 10399	39R00	5% 1W
3409	5322 101 11014	5K	POTMETER
3410	4822 051 20153	15K00	5% 0,1W
3411	4822 051 20689	68R00	5% 0,1W
3412	4822 051 20183	18K00	5% 0,1W
5411	4822 050 21008	1R00	1% 0,6W
5412	4822 050 21008	1R00	1% 0,6W
7401	4822 209 32207	TDA3611	
7411	4822 130 32911	BYV10-30	
7412	4822 130 32911	BYV10-30	

AIDS AND TOOLS

100	4822 390 10107	ISO FLEX PDP65
101	4822 390 20128	TOPAS L30
103	4822 390 10123	MOBIL OIL SHC 634
104	4822 390 20027	GLEITMO 805K
105	4822 390 20128	L30 TF
107	4822 390 20139	GLEITMO 535K